PRELIMINARY ASSESSMENT
NEWARK MUNITIONS STORAGE SITE
STATE ROUTE 72 AND DAWSON DRIVE
NEWARK, DELAWARE

DE-259

JUNE 24, 1992

DELAWARE DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT

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NEWMUN.PA

ORIGINAL (Red)

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ORIGINAL (Red)

Date: June 1992

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Environmental Scientist III
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Site: Newark Munitions Storage Site
State Route 72 and Dawson Drive
Newark, Delaware 19713

EPA ID No.: DED 984 074 781

Delaware ID No.: DE-259

1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Delaware Department of Natural Resources and Environmental Control (DE DNREC) conducted a Preliminary Assessment (PA) at the Newark Munitions Storage Site (DED 984074781) on northbound State Route 72 in Newark, Delaware. The purpose of the Preliminary Assessment at the Newark Munitions Storage Site was to assess the potential threat to human health, safety, and the environment and to determine the need, if any, for additional investigation under CERCLA/SARA. DNREC requested a PA because it was known from historical review that the site had been used for storage of munitions during World War II. Munition storage areas typically contained materials which left on-site could pose threats to human health and the environment. Such materials like heavy metals (slag, munition chemicals) and Polycyclic Aromatic Hydrocarbons are common to these sites. The scope of the investigation included a review of available data, a target summary, and a site reconnaissance.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

2.1 Location

Newark Munitions Storage Site is located on the eastern side of State Route 72, at Dawson Drive, 1.5 miles south of the City of Newark in New Castle County, Delaware (see figures 1, 2). The site is bordered by residential areas and a middle school on the north and northeast, Route 72 on the west, Interstate 95, industrial, and commercial properties on the south, and undeveloped land on the east (see figure 3), (References 1, 2). The latitude/longitude coordinates are 39° 39′ 12.42", 75° 43′ 40.70" (Reference 3).

New Castle County is characterized by a continental type climate with well defined seasons. The mean annual temperature in Wilmington, Delaware, the nearest meteorological monitoring station to the site, is 53.9°F (Reference 4). Net annual precipitation was calculated to be 8.33 inches (mean annual precipitation minus mean lake evaporation) (Reference 5).

2.2 Site Description

The total area of the Newark Munitions Storage Site is 1.03 square miles. The rectangular shaped site is located on relatively flat terrain that slopes gently toward the center from both the eastern and western boundaries. The western portion of the site (approximately one half of the site) is currently used as the Delaware Industrial Park. The eastern half is undeveloped and wooded.

U-shaped blast containment structures and other features associated with the storage of munitions have been removed in the western section of the site and along a power line right of way that runs through the eastern part. Blast containment structures do still exist in the wooded, undeveloped eastern section of the site. Evidence of former railroad lines used in moving munitions (railroad ties, spikes, slag) were noted during the site reconnaissance. Evidence of recent construction debris dumping and recreational activity was also noted during the walkover (Reference 6).

Vegetation is abundant in the undeveloped eastern section of the site. Stressed vegetation was not observed during the site reconnaissance. Much of the western part of the site has been landscaped as part of the industrial park development (Reference 6).

2.3 Operational History and Waste Characteristics

The Newark Munitions Storage Site was operational from April 1944 until shortly after V-J Day (August 14, 1945). The site was used as a transhipment and storage facility for munitions shipped through the Port of New York for the invasion of Europe in the Second World War. The Army Service Forces, Quartermaster and Ordnance Corps ran the facility. The Munitions Storage Site contained ten (10) miles of railroad track, forty four (44) blast containment structures, guard towers, and was surrounded by barbed wire fences (Reference 7). Munitions were moved in and out of the site by rail. The blast containment structures are U-shaped and approximately 100 feet wide and 400 feet long.

DNREC contacted the Baltimore District of the U.S. Army Corp of Engineers to solicit additional information on the type of operations which were performed at the facility, including information on the types of materials stored. The Corp did not have the information requested. They did state that during the fiscal year, 1993 the site was scheduled for investigation. Upon completion of the investigation an Inventory Project Report will be filed which documents the materials stored and activities which occurred at the facility during the time the Army occupied the land (Reference 8).

Historical aerial photographs show the site as farmland until the munitions storage facility was built. The air photographs also show the site as unused and increasingly overgrown during the 1950's and early 1960's after the site was closed. During this time period the residential development of Scottfield was built along the northern boundary of the site and Interstate 95 was built through the southernmost portion of the site. During the late 1960's and early 1970's the Delaware Industrial Park was established on the western side of the site. The rest of the site was left wooded. The northern portion of the site was encroached upon by further extension of the Scottfield and Breezewood residential

developments. The area around the site continued to become developed as residential and commercial/industrial facilities were built. The western half of the site was fully developed as an industrial park by the early 1980's. The eastern half of the site continued to be overgrown and undeveloped (Reference 9). This is the current status of the site today.

The site is zoned M-2, general manufacturing (Reference 10). The site is divided into fifteen parcels of land, owned by the following; Delaware Industrial Park (four parcels), Delaware Industries (one parcel), Delaware Industries, Inc. (one parcel), Delaware Insulation Company (one parcel), Delaware Investment Associates (seven parcels), and Delaware Industrial Building Company (one parcel) (Reference 11).

This Preliminary Assessment considered only the Newark Munitions Storage Facility as the potential waste source. The DE DNREC has responded to environmental concerns at facilities in the Delaware Industrial Park area of the site in the past. Preliminary Assessments have been performed on the Dupont and Co. Riston Products (DE-248) and Helix Associates, Inc. (DE-173) sites. Known leaking underground storage tank (LUST) sites are Helix Corporation Newark (N8608076), Mapelli Brothers (N9010078), and Fran's Dairy Market #2 (N9203065).

The boundaries of the study area were determined according to telephone instructions from Melissa Whittington of EPA on June 1, 1992. Since the site is more than a mile in width, it was decided to take this into account when defining circular areas for target factor determinations. The radii of the appropriate circles were increased by 0.5 miles to account for the size of the site.

3.0 GROUNDWATER PATHWAY

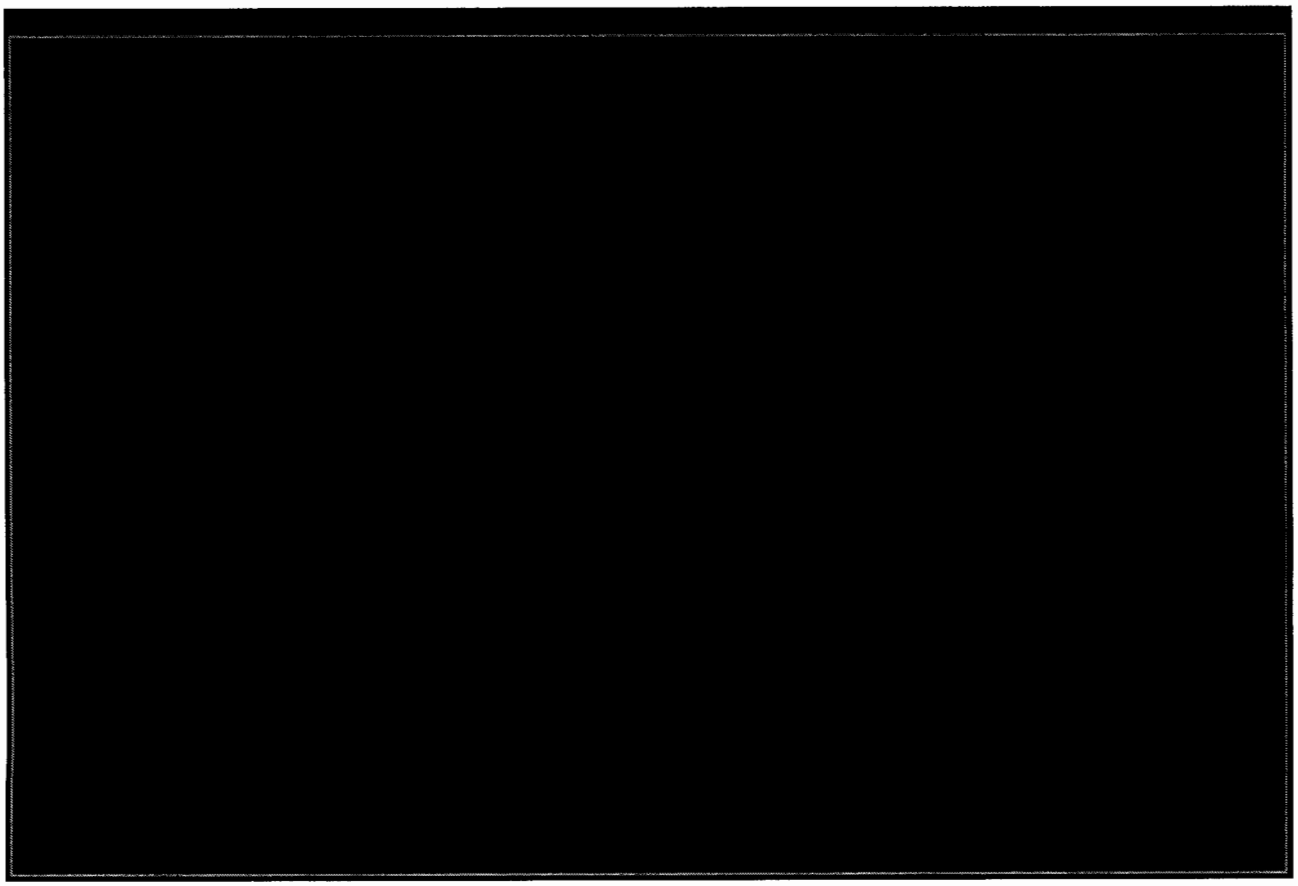
3.1 Hydrogeologic Setting

The Newark Munitions Storage Site is located in the Coastal Plain physiographic province, south of the Fall Zone, the boundary between the Piedmont physiographic province and the Coastal Plain. The study area encompasses portions of both provinces. The Coastal Plain is a southeasterly dipping wedge of unconsolidated gravels, sands, silts, and clays of Cretaceous to Quaternary Age. The Coastal Plain stratigraphic units in the study area are the Potomac Formation, the Columbia Formation, and Holocene deposits. These sediments unconformably overlie the basement rocks of the Piedmont physiographic province (see figure 4). In the study area the coastal plain sediments are up to approximately 190 feet thick. The Piedmont in the study area is composed of weathered saprolite overlying consolidated rock. The Wissahickon Formation and Wilmington Complex of the Piedmont are composed of schists and amphibolites, gabbros, and banded gneisses, respectively (Reference 12).

At the site and in the southern section of the study area, the water table aquifer consists of the Columbia and Potomac Formations. Depending upon the presence and thickness of sands in either formation, satisfactory well yield at a location may be obtained by screening a well in either formation. However, in general the two formations should be considered one leaky aquifer (Reference 12).

Obtaining satisfactory well yield in the northern, Piedmont section of the study area is difficult as the permeability of the rocks is extremely variable. The permeability is dependant upon the fracturing present in the Piedmont rocks. Well yields are generally low.

The western portion of the site is part of a wellhead protection area defined by New Castle County Water Resources Agency (Reference 13).



4.0 SURFACE WATER PATHWAY

4.1 Hydrologic Setting

Overland flow and runoff from the site flows from the edges toward the center and then southward to an unnamed tributary of the Christina River. The unnamed tributary joins the Christina River approximately 0.85 miles downstream. The Christina River eventually joins with Brandywine Creek and empties into the Delaware River. Tidal influences extend up the Christina River to start 10 miles downstream of the site (Reference 19). The site lies outside the floodplain of the Christina River (Reference 20).

4.2 Surface Water Targets

Extensive fisheries lie within the fifteen mile downstream target distance along the Christina River. The Christina River is affected by tidal influences up to Smalley's Dam. In the western portion of the river, upstream of the dam, large mouth bass, blue gill, crappie, and catfish are found. In the eastern, downstream portion of the target distance eel, white perch, largemouth bass, and blue gill are found (Reference 19).

There are no wildlife refuges within the fifteen mile downstream surface water target distance. The study area offers transient habitat for two federally listed endangered bird species, the bald eagle (Haliaeetus leucocephalus) and the peregrine falcon (Falco peregrinus). No federally listed critical habitats for these species exist in the study area (Reference 21).

Wetlands are present along much of the target distance of the Christina River. The wetlands are classified as palustrine forested broad-leaf seasonal and estuarine intertidal emergent (Reference 22).

[redacted]

4.3 Surface Water Conclusions

Based on the site reconnaissance and the evaluation of targets, there does not appear to be a serious threat of a release of contaminants at the site.

5.0 SOIL EXPOSURE AND AIR PATHWAYS

5.1 Physical Conditions

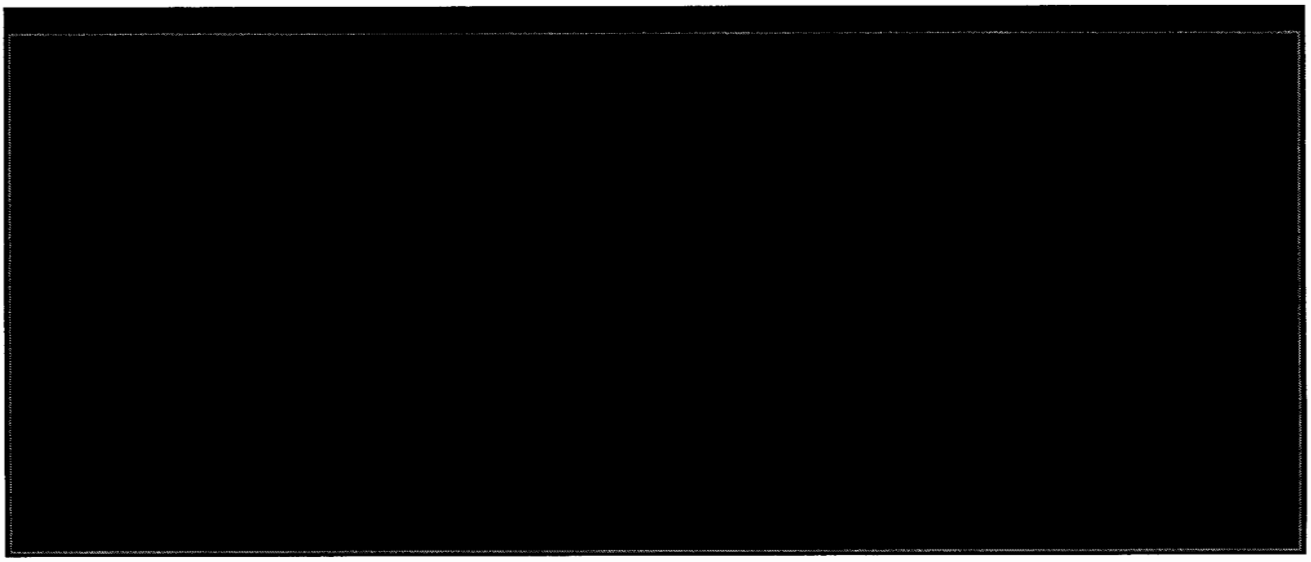
The western portion of the site has been developed as an industrial park and as such is partially paved and landscaped. The eastern section is well forested and undeveloped (Reference 6). Evidence of the munitions storage activities have been removed from the developed western portion. Blast containment structures and railroad beds are still present in the eastern section of the site.

5.2 Soil and Air Targets

Workers at the various Delaware Industrial Park facilities would be the nearest receptors for any possible contamination. Residences and a middle school border the site but are more than 200 feet away from any sources of possible contamination. Wetlands occur in the unnamed tributary to the Christina River approximately 0.85 miles south of the site (Reference 22).

5.3 Soil Exposure and Air Pathway Conclusions

Based on the site reconnaissance and the evaluation of targets, it does not appear that a serious threat of a release of contaminants exists at the site. Continuous air monitoring was conducted during the site reconnaissance. The monitoring instruments did not detect any contaminant releases to the air (Reference 6).



LIST OF FIGURES

FIGURE 1

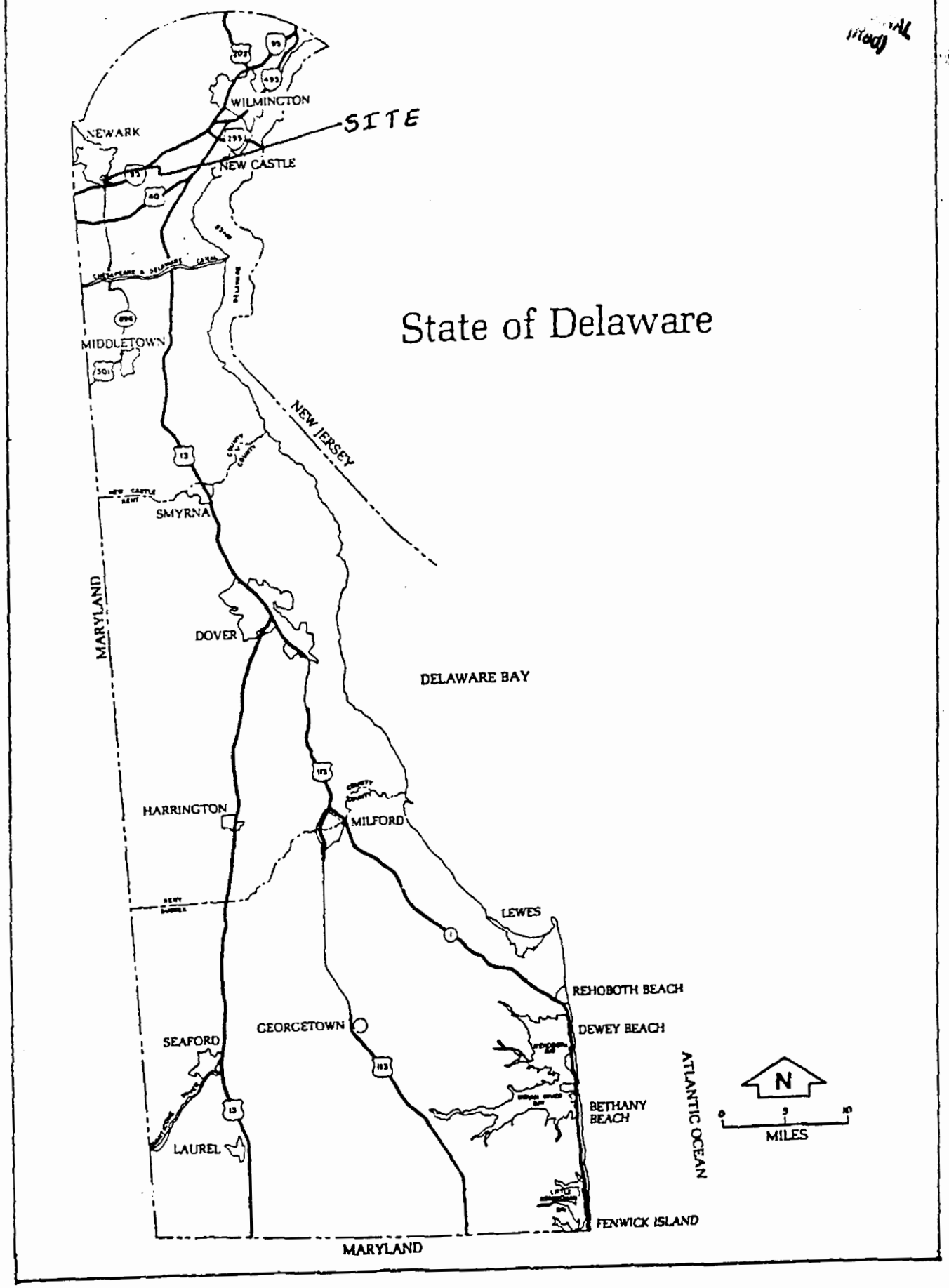
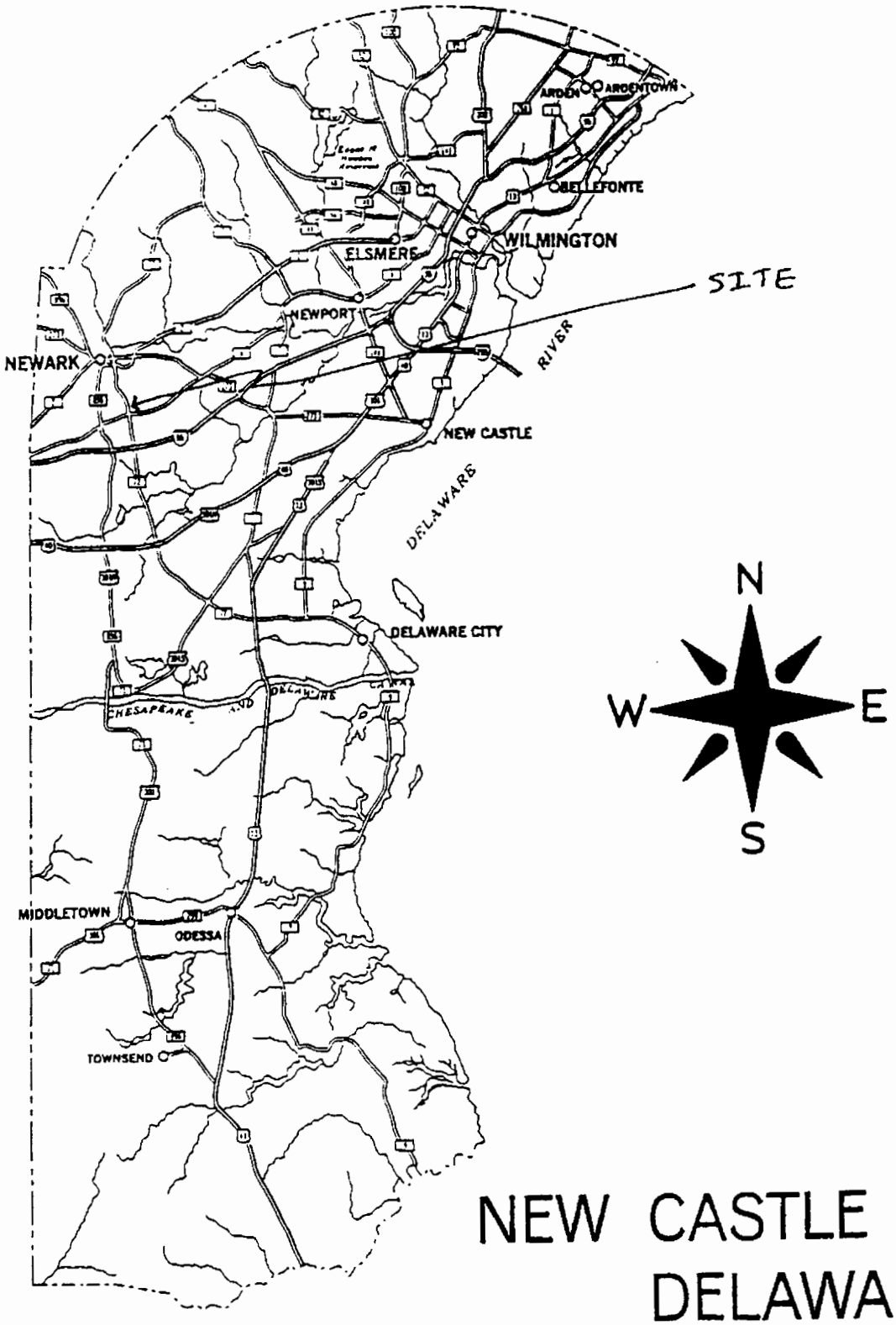
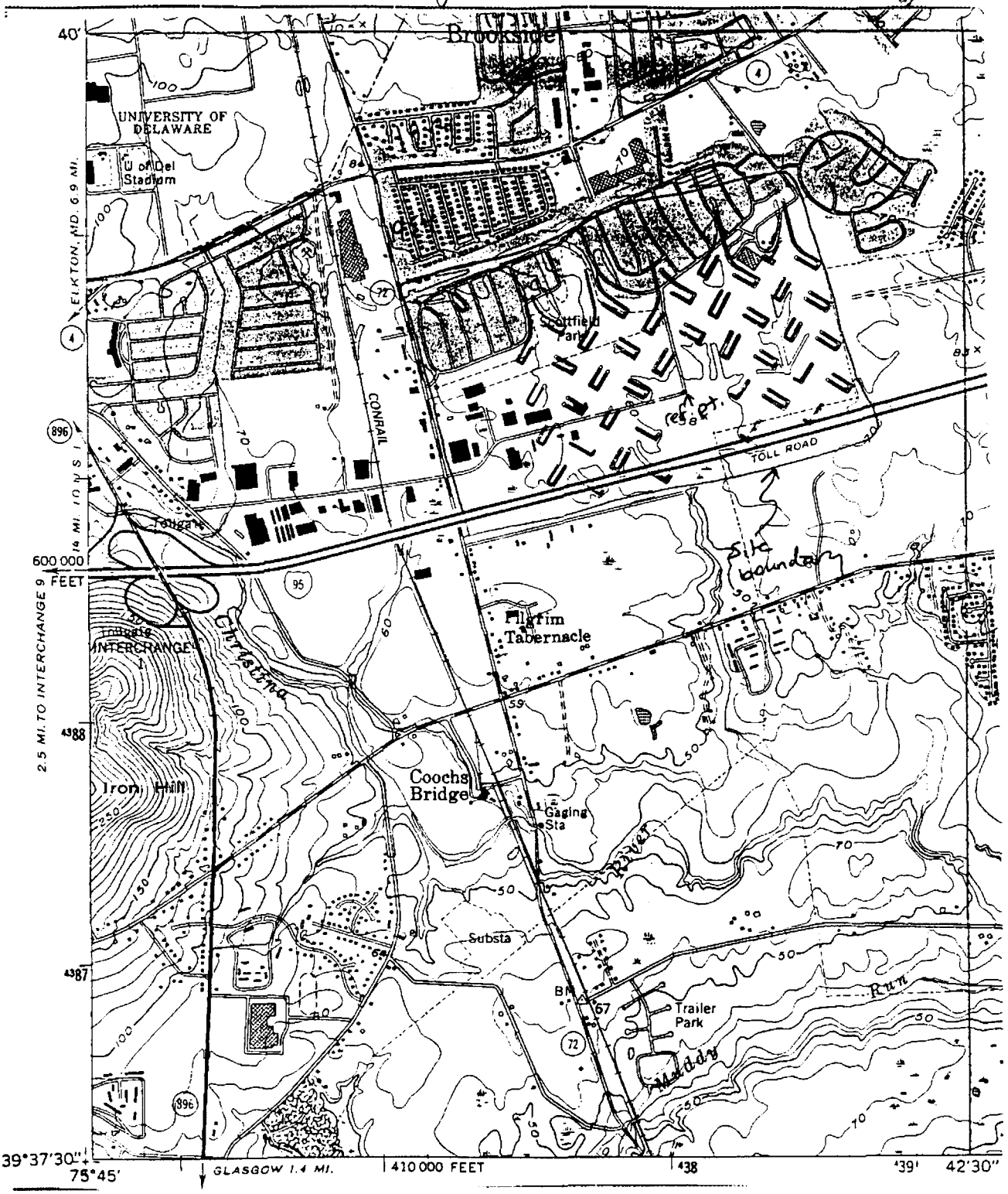

State of Delaware
SITE
WILMINGTON
NEWARK
NEW CASTLE
MIDDLETOWN
SMYRNA
DOVER
HARRINGTON
MILFORD
LEWES
REHOBOTH BEACH
DEWEY BEACH
BETHANY BEACH
FENWICK ISLAND
GEORGETOWN
SEAFORD
LAUREL
MARYLAND
NEW JERSEY
DELAWARE BAY
ATLANTIC OCEAN
MARYLAND
N
MILES

FIGURE 2



NEW CASTLE COUNTY
DELAWARE

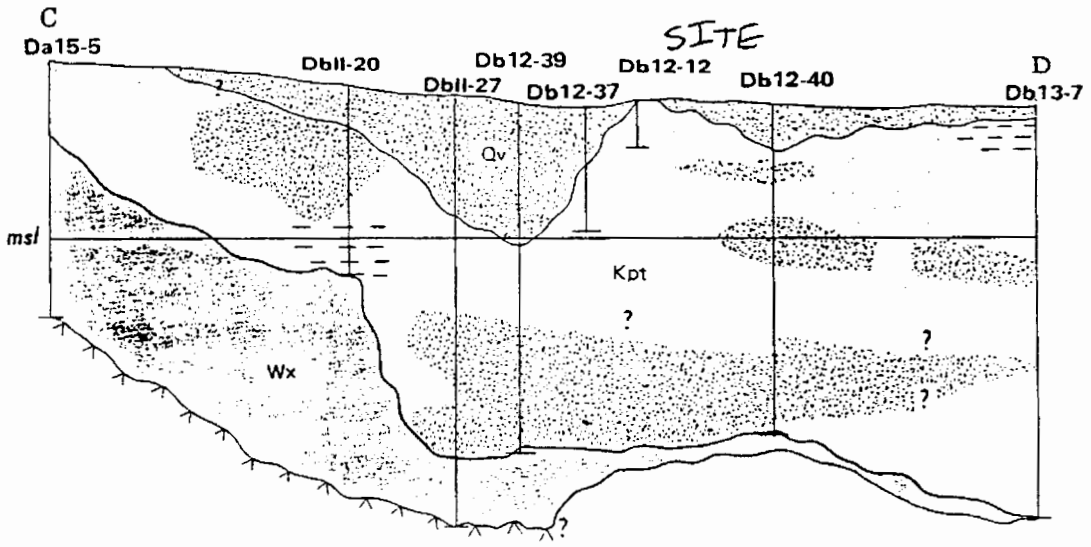
SITE NAME: Newark Munitions Storage Site NUMBER: DED 984074 ORIGINAL (Red)



TOPOGRAPHIC MAP QUADRANGLE NAME: Newark East, DE SCALE: 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 39 ° 37 ' 30 " LONGITUDE: 75 ° 42 ' 30 "



DELAWARE GEOLOGICAL SURVEY

GEOHYDROLOGY OF THE NEWARK AREA NEWARK EAST, NEWARK WEST QUADRANGLES

HYDROLOGIC MAP SERIES, NO. 2

SHEET 1—BASIC GEOLOGY

REFERENCES

1. U.S.G.S. topographic map, 7.5 minute quadrangle, Newark East, DE, 1985.
   U.S.G.S. topographic map, 7.5 minute quadrangle, Newark West, MD-DE-PA, 1990.
   U.S.G.S. topographic map, 7.5 minute quadrangle, St. Georges, DE, 1985.
   U.S.G.S. topographic map, 7.5 minute quadrangle, Elkton, MD-DE, 1985.

2. Photodocumentation Log, June 2, 1992.

3. Site latitude and longitude calculations.

4. The Climatic Atlas of the United States, U.S. Department of Commerce, 1983.

5. Local Climatological Data, Annual Summary with Comparative Data, Wilmington, Delaware, National Oceanic and Atmospheric Administration, 1991.

6. Field notes of site reconnaissance by DE DNREC personnel, June 2, 1992.

7. Kevin Kennard, Historical Society of Delaware, telephone conversation with Anne Hiller, DE DNREC, Superfund. RE: Site history.

8. Phone call between U.S. Army Corp of Engineers Representative (Baltimore District) and Karl Kalbacher.

9. W.S. Schenck, Delaware Geological Survey, office visit by Anne Hiller, DE DNREC Superfund. RE: Historical aerial photographs of site area.

10. New Castle Interim Zoning Maps, New Castle County Planning Department.

11. Joe Fitzgerald, DE DNREC volunteer, telephone conversation with Karl Kalbacher, DE DNREC Superfund. RE: Deed search for the site.

12. Woodruff, K.D. et al, Geology and Ground Water, University of Delaware, Newark, Delaware, Report of Investigations No. 18, Delaware Geological Survey, 1972.

13. Water Resource Protection Areas, Sheet 1 of 3, Water Resources Agency, New Castle County, 1987.

14. Geohydrology of the Newark Area, Newark East, Newark West Quadrangles, Sheet 2--Hydrologic Data, Hydrologic Map Series No. 2, Delaware Geological Survey, 1978.

15. Community Water Supplies--New Castle, Kent and Sussex Counties, Delaware, Division of Public Health, 1991.

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17. Public Water Systems in Delaware, DE DNREC, Water Supply Branch, 1978.

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19. Phil Carpenter, DE DNREC, Division of Fish and Wildlife, telephone conversation with Anne Hiller, DE DNREC Superfund.

20. Flood Boundary and Floodway Map, New Castle County, Delaware, Unincorporated Areas, Panel 40 of 110, Federal Emergency Management Administration, 1990.

21. NUS Corporation, Environmental Priorities Initiative, Preliminary Assessment of DuPont E.I. Riston Products Center, prepared for the Hazardous Site Control Division of the U.S. EPA, June 28, 1991.

22. National Wetlands Inventory Map, Newark East, DE Quadrangle, U.S Department of the Interior.

REFERENCE 1

U.S.G.S. TOPOGRAPHIC 7.5 MINUTE QUADRANGLE MAPS

Newark East, DE
Newark West, MD-DE-PA
St. Georges, DE
Elkton, MD-DE

REFERENCE 2

PHOTODOCUMENTATION LOG

Site Reconnaissance, June 2, 1992

EPA REGION III
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOC ID # 415369
PAGE # _____

IMAGERY COVER SHEET
UNSCANNABLE ITEM

Contact the CERCLA Records Center to view this document.

SITE NAME Newark Municipal Storage
OPERABLE UNIT OU
SECTION/BOX/FOLDER IC 1. 1.007

REPORT OR DOCUMENT TITLE preliminary assessment (PA)
DATE OF DOCUMENT 6-24-92
DESCRIPTION OF IMAGERY site photos & map
NUMBER AND TYPE OF IMAGERY ITEM(S) site photos/map

REFERENCE 3

ORIGINAL (Red)

SITE LATITUDE AND LONGITUDE CALCULATIONS

ORIGINAL (Red)

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #2
LI USING ENGINEER'S SCALE (1/60)

SITE NAME: Newark Munitions Storage Site CERCLIS #: _____

AKA: _____ SSID: _____

ADDRESS: _____

CITY: Newark STATE: DE ZIP CODE: 19713

SITE REFERENCE POINT: Corner of Main access road in middle of site

USGS QUAD MAP NAME: Newark East, Del. TOWNSHIP: N/A N/S RANGE: N/A E/W

SCALE: 1:24,000 MAP DATE: 1953/85 SECTION: N/A 1/4 N/A 1/4 N/A 1/4

MAP DATUM: (1927) 1983 (CIRCLE ONE) MERIDIAN: _____

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 75 ° 37 ' 30 " LATITUDE: 39 ° 37 ' 30 "

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 75 ° 42 ' 30 " LATITUDE: 39 ° 37 ' 30 "

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM LATITUDE GRID LINE TO SITE REF POINT: 310

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A x 0.3304 = 102.42 "

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 1 ' 42 . 42 "

D) ADD TO STARTING LATITUDE: 39 ° 37 ' 30 . 0 " + 1 ' 42 . 42 =

SITE LATITUDE: 39 ° 39 ' 12 . 42 "

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM RIGHT LONGITUDE LINE TO SITE REF POINT: 214

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A x 0.3304 = 70 . 70 "

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 1 ' 10 . 70 "

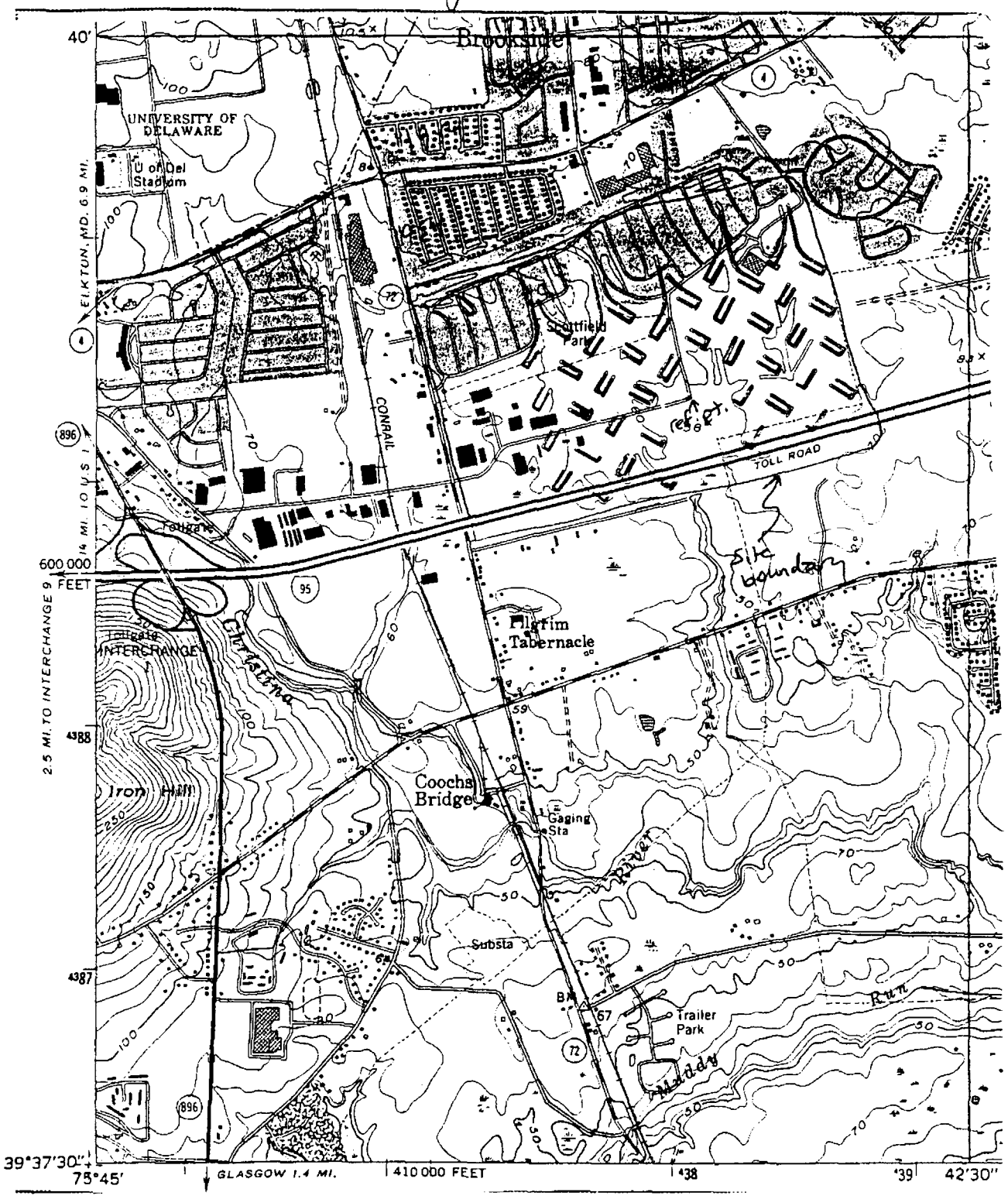
D) ADD TO STARTING LONGITUDE: 75 ° 42 ' 30 . 0 " + 1 ' 10 . 70 =

SITE LONGITUDE: 75 ° 43 ' 40 . 70 "

INVESTIGATOR: Glenn W. Hille DATE: 6/11/92

ORIGINAL (Red)

SITE NAME: Newark Munitions Storage Site NUMBER: DED 9840747 81



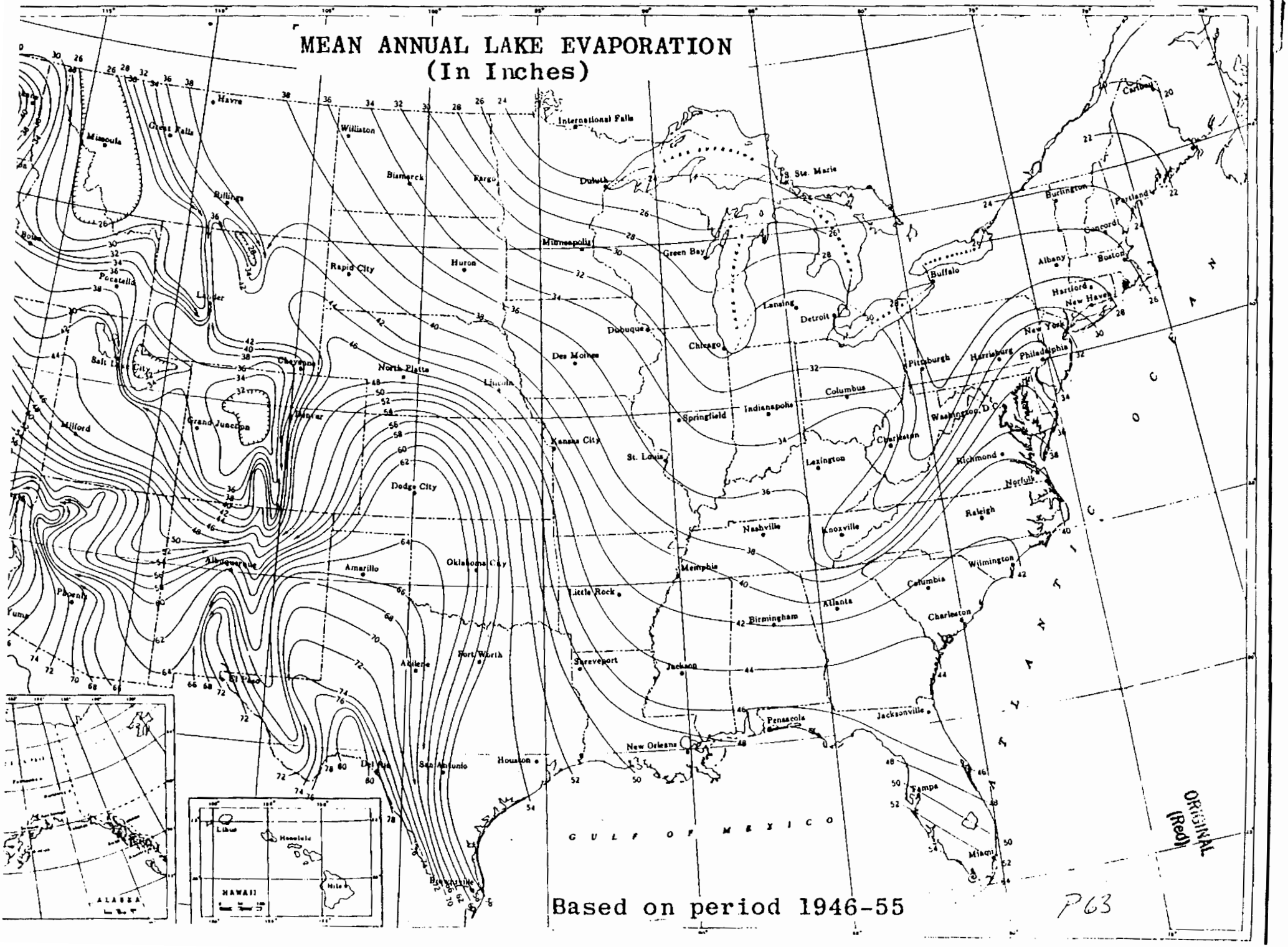
TOPOGRAPHIC MAP QUADRANGLE NAME: Newark East, DE SCALE: 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 39 ° 37' 30" LONGITUDE: 75 ° 42' 30"

CLIMATIC ATLAS OF THE UNITED STATES

MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

P63

ORIGINAL (Red)

REFERENCES

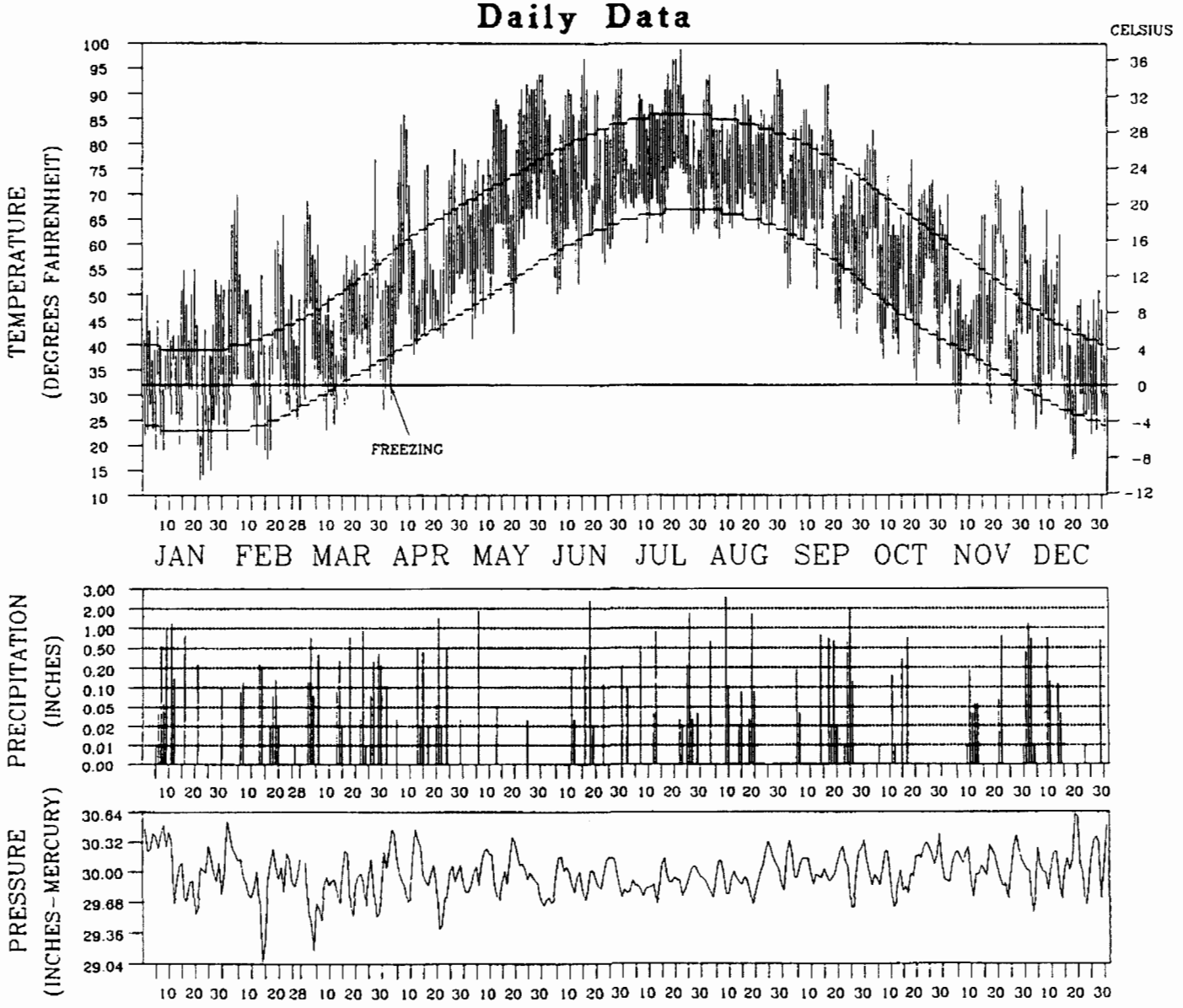
DGTST

USN 0198-LL05

1991 LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA

WILMINGTON,
DELAWARE

Daily Data



TEMPERATURE DEPICTS NORMAL MAXIMUM, NORMAL MINIMUM AND ACTUAL DAILY HIGH AND LOW VALUES (FAHRENHEIT)
PRECIPITATION IS MEASURED IN INCHES. SCALE IS NON-LINEAR
STATION PRESSURE IS MEASURED IN INCHES OF MERCURY

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER, ASHEVILLE, NORTH CAROLINA, 28801

Kenneth D Wallace
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa
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NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

ORIGINAL (Red)

PRECIPITATION (inches)

WILMINGTON, DELAWARE

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1962	2.51	3.26	4.30	3.50	1.61	3.05	1.78	1.87	3.65	1.51	4.87	2.50	34.41
1963	2.05	2.09	4.24	1.12	1.23	3.26	1.65	4.03	3.50	0.21	6.87	1.85	32.10
1964	4.13	3.37	2.20	5.97	0.22	1.02	3.70	1.83	2.77	1.29	1.62	4.70	32.82
1965	2.38	2.17	3.20	1.76	1.41	1.62	3.84	2.04	2.41	1.59	0.94	1.54	24.90
1966	2.82	4.90	0.81	3.16	3.35	0.70	3.09	1.42	8.53	5.17	1.75	3.81	39.51
1967	1.67	1.90	5.45	2.69	3.79	3.01	4.45	11.16	1.16	2.05	2.08	5.24	44.65
1968	2.29	1.52	4.75	1.57	4.78	2.81	1.83	1.17	1.50	3.28	3.92	2.33	31.75
1969	1.68	1.76	1.71	1.58	3.21	3.62	6.48	2.34	6.84	1.47	1.79	7.90	40.38
1970	1.00	2.13	3.61	5.56	0.94	6.16	6.03	2.31	0.82	2.64	4.09	3.02	38.31
1971	2.22	6.29	2.29	2.15	4.51	2.50	3.65	8.38	6.99	6.41	5.52	1.33	52.24
1972	2.50	5.43	2.40	4.47	3.85	7.49	2.07	0.25	1.64	4.20	7.84	5.99	48.13
1973	3.81	3.42	4.02	6.57	5.56	5.19	2.82	2.44	3.02	2.22	0.67	7.31	47.05
1974	2.92	1.73	4.56	3.08	3.96	3.97	1.49	5.11	5.65	1.77	1.19	4.18	39.61
1975	4.23	2.95	4.63	3.03	5.65	6.16	5.53	2.55	6.19	3.06	2.63	3.00	49.61
1976	4.21	1.70	2.25	1.40	5.05	2.14	4.33	2.00	2.11	6.12	0.49	1.79	33.59
1977	2.18	1.09	4.55	3.91	0.96	4.41	1.38	4.82	1.29	3.59	6.14	5.81	40.13
1978	8.41	1.77	5.59	2.16	6.94	3.00	5.53	5.97	2.18	1.48	2.69	5.56	51.28
1979	7.61	7.02	2.61	4.03	3.10	4.01	4.76	6.11	5.94	3.45	3.23	1.44	53.31
1980	2.44	0.83	6.22	4.55	2.40	4.23	3.49	1.09	1.44	3.99	2.41	0.83	33.92
1981	0.52	3.23	1.26	3.54	5.05	4.50	2.52	3.38	3.82	2.84	0.67	3.95	35.28
1982	3.75	2.71	2.87	5.41	3.72	4.70	2.70	4.68	2.30	1.97	3.87	2.39	41.07
1983	2.98	3.55	6.84	6.80	7.38	3.94	2.33	1.29	3.44	3.87	5.48	6.80	54.70
1984	1.25	4.27	5.40	4.24	5.03	4.54	6.53	1.56	2.02	3.31	1.63	1.94	41.72
1985	1.56	2.05	2.03	0.35	5.52	1.37	6.91	2.28	4.56	1.84	4.46	0.80	33.73
1986	4.21	2.77	1.19	2.77	1.69	4.05	3.99	2.88	2.75	4.04	6.42	6.11	42.87
1987	4.35	1.52	1.16	2.63	3.15	2.31	4.09	4.21	4.85	2.31	3.50	1.90	35.98
1988	2.46	4.14	1.82	2.59	4.95	0.21	8.29	3.03	2.18	1.94	5.29	0.90	37.80
1989	2.48	2.75	3.69	2.76	6.57	5.43	12.63	1.97	4.31	3.92	1.99	1.27	49.77
1990	3.56	1.35	2.15	3.42	7.03	3.94	4.27	6.15	2.64	2.85	1.61	5.16	44.13
1991	4.30	0.97	4.64	3.28	1.98	3.41	3.71	5.38	5.36	1.27	1.26	4.26	39.82
Record Mean	3.31	3.05	3.65	3.51	3.67	3.76	4.55	4.54	3.61	3.01	3.23	3.43	43.33

See Reference Notes on Page 6B.

AVERAGE TEMPERATURE (deg. F)

WILMINGTON, DELAWARE

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1962	31.2	31.3	41.2	52.2	64.2	71.5	72.6	72.9	63.6	56.7	42.5	30.3	52.5
1963	28.4	27.5	44.1	52.6	60.3	70.8	76.3	71.7	63.7	58.4	48.0	28.4	52.5
1964	33.2	31.6	43.1	49.4	64.3	72.1	75.8	71.5	67.2	52.8	47.6	37.3	53.8
1965	29.0	33.6	38.4	49.3	66.0	70.2	74.5	73.3	69.4	53.6	45.0	37.7	53.3
1966	29.3	31.9	42.9	47.9	60.3	72.5	77.2	74.8	65.3	53.6	46.6	34.8	53.1
1967	36.2	29.4	39.4	51.5	55.4	71.2	74.4	72.8	65.1	54.7	40.7	36.8	52.3
1968	28.0	30.5	44.6	54.1	59.6	71.4	76.7	77.1	69.7	59.0	47.0	34.2	54.3
1969	30.8	33.6	39.6	55.1	64.2	73.4	75.7	75.4	68.2	56.0	44.6	32.7	54.1
1970	24.5	33.5	38.9	51.9	64.8	71.7	76.6	76.7	72.1	60.4	48.5	35.9	54.6
1971	27.4	35.5	40.7	51.1	60.4	73.4	75.9	74.0	71.1	62.9	45.7	42.1	55.0
1972	36.1	32.6	41.3	50.0	62.5	68.6	76.9	75.5	69.6	53.5	45.2	41.6	54.4
1973	35.6	35.5	49.4	54.7	61.4	75.8	78.1	78.1	70.4	59.9	49.1	37.7	57.2
1974	36.2	33.1	44.3	55.5	62.4	70.4	76.7	76.1	66.5	53.2	46.6	38.9	55.0
975	37.5	35.9	40.6	47.5	65.2	71.5	75.7	76.3	65.4	60.0	51.0	36.2	55.2
976	27.7	41.2	46.5	54.7	59.9	72.4	74.2	73.7	66.9	52.5	40.4	31.0	53.4
1977	20.8	33.3	47.2	54.4	63.9	68.9	76.4	75.4	69.3	53.4	46.6	33.4	53.6
1978	27.2	22.8	37.6	50.3	60.3	70.6	73.4	77.1	66.7	54.1	46.8	37.2	52.0
1979	31.4	22.1	45.4	50.6	63.8	67.9	75.3	75.0	68.2	55.0	49.6	38.1	53.5
1980	32.4	29.9	40.0	54.6	64.9	68.9	77.7	78.2	71.3	54.8	43.3	33.1	54.1
1981	25.4	37.9	40.2	55.0	62.5	72.3	77.1	73.5	66.9	53.0	45.3	34.2	53.6
1982	24.2	34.2	41.8	50.6	65.0	69.9	77.3	72.0	67.4	56.0	47.5	41.3	53.9
1983	35.2	35.3	45.9	53.1	61.0	71.8	77.6	77.0	69.3	56.9	46.7	32.1	55.2
1984	24.8	38.6	35.6	50.7	61.2	73.8	75.2	75.2	63.7	61.2	43.3	42.1	53.8
1985	27.5	37.4	47.1	58.0	65.9	70.6	76.6	74.4	69.1	58.3	51.0	32.9	55.7
1986	32.2	31.6	43.6	52.4	65.7	72.1	77.1	72.5	67.5	57.2	44.1	37.3	54.4
1987	31.4	31.9	44.6	52.3	63.1	73.5	79.1	74.3	68.3	51.7	47.4	38.6	54.7
1988	27.4	34.8	44.2	50.8	62.9	71.6	79.4	77.3	65.8	51.0	46.7	35.1	53.9
1989	36.0	34.3	42.1	51.6	62.1	74.3	75.9	74.4	68.4	57.6	44.6	25.0	53.9
1990	40.5	41.1	46.0	53.7	61.5	72.1	77.4	74.6	66.7	60.0	48.4	41.0	56.9
1991	34.3	39.7	44.9	54.7	69.1	73.6	77.3	76.7	67.2	57.6	46.8	39.5	56.8
Record Mean	32.2	33.3	42.3	52.3	62.8	71.3	76.1	74.3	67.8	56.5	45.7	35.3	54.2
Max	40.0	41.6	51.6	62.8	73.4	81.6	85.7	83.7	77.6	66.5	54.5	43.1	63.5
Min	24.3	24.9	32.7	41.8	52.1	61.1	66.5	64.8	58.1	46.6	36.9	27.5	44.8

See Reference Notes on Page 6B.

REFERENCE 6

SITE RECONNAISSANCE FIELD NOTES

June 2, 1992

REFERENCES

Newark Munitions Storage Site 6/2/92
NEWARK, DE

10:25 AM - ANNE HILLER AND CRAIG KOSTYSIAN ARRIVED AT SITE.
- MET KARL KALDACHER AT SYNTHESIS TECHNOLOGIES.
- DROVE THROUGH DELAWARE INDUSTRIAL PARK. UNABLE TO DISTINGUISH AREAS OF FORMER BLAST CONTAINMENT STRUCTURES WITHIN THE INDUSTRIAL PARK PROPER.

PHOTO 1, 2 - BERM AT NE END OF CARFIELD WAY, APPROX 2 STORIES HIGH, GRADED SIDES
- TOOK STATE TRUCK ONTO LAND OWNED BY STATE OF DE (UNDEVELOPED PART OF SITE, EASTERN PART) TO EXAMINE BERMED AREAS. DID INITIAL SURVEY FROM TRUCK.

PHOTO 3 - TRAIL THRU MUNITIONS STORAGE AREA (LOOKING SOUTH) APPEARS TO HAVE BEEN ONE OF THE ACCESS WAYS BETWEEN ROWS OF BLAST CONTAINMENT

P3 of 6 Anne Hiller

S TURES

- EVIDENCE SEEN OF DIRT BIKE USE AT THE SITE.
- SCHOOL CHILDREN HEARD

PHOTO 4 - SCHOOL LOCATED ADJACENT TO SITE. SCHOOL SEPARATED FROM SITE BY FENCE, OVERGROWN DITCH/CREEK AREA, POWER LINE RIGHT OF WAY (DISTANCE APPROXIMATELY 300 - 400 FT)

PHOTO 5 - RESIDENTIAL HOMES ADJACENT TO SITE. BELIEVE TO BE PART OF SCOTFIELD DEVELOPMENT.

11:00 AM - LEFT VEHICLE IN VICINITY OF PHOTO 3 TO VISUALLY INSPECT BLAST CONTAINMENT STRUCTURES

O_2 = 21% HNU reading = 0

LEL = 0% HNU units

- WALKED DOWN TRAIL IN PHOTO 3. AREA USED FOR DIRT BIKE RIDING. TRASH AND CONSTRUCTION DEBRIS

Pg 2 of 6 Anne Hillen

PRESENT IN AREA.

PHOTO 6,7 - TRAIL UP SIDE OF BLAST CONTAINMENT STRUCTURE

- CLIMBED UP TRAIL IN PHOTO 6

PHOTO 8,9 - LOOKING TOWARD OPEN END OF BLAST CONTAINMENT STRUCTURE FROM TOP:

- TOP OF BERM ~ 5 FT WIDE
- BASE OF BERM ~ 20 FT WIDE
- AREA INSIDE BLAST CONTAINMENT STRUCTURE FORRESTED, POOLS OF STANDING WATER PRESENT, THICK PILE OF ORGANIC MATTER ACCUMULATED ON GROUND. SOME DEBRIS PRESENT.
- WALKED AROUND BLAST CONTAINMENT STRUCTURE TOWARD ENTRANCE.
- FOUND MORE EVIDENCE OF DIRT BIKE USE. ALSO SAW A FROG POND. APPEARED MAN-MADE

PHOTO 10 - FROG POND

PHOTO 11 - APPARENT RAILROAD TRACK WITH SPIKES AND SLAG

- RR TRACK APPRX. 8 FT WIDE BLACK COLORED.

P3 of 6 Anne Hillen

ORIGINAL

- DRAINAGE DITCH / [illegible]
ALONG BOTH SIDES OF RR
TRACK - PERHAPS EXCAVATED
TO PROVIDE MATERIAL FOR
RR BED.

PHOTO 12 - RUSTED DRUM IN DITCH
- RR TIES ALSO PRESENT
ALONG TRACK. NO RAILS
SEEN.

PHOTO 13 - RR TIES

PHOTO 14 - DRAINAGE CULVERT W/
3 DRAINAGE PIPES.
- DEBRIS SEEN IN AREA:
RUSTED + ABANDONED CAR
OIL BOTTLES
BEER CANS
BOX OF SHOT GUN SHELLS
- SAW PIECE OF RUSTED MILITARY
ROADWAY FOR SOFT SURFACES
→ PROBABLY ALSO HAD ROADS
ON THE SITE
- ABUNDANT FOREST VEGETATION
- NO STRESSED VEGETATION
OBSERVED.

11:54AM TURNED INSTRUMENTS
OFF WHEN RETURNED TO TRUCK

Pg 4 of 6 [signature]

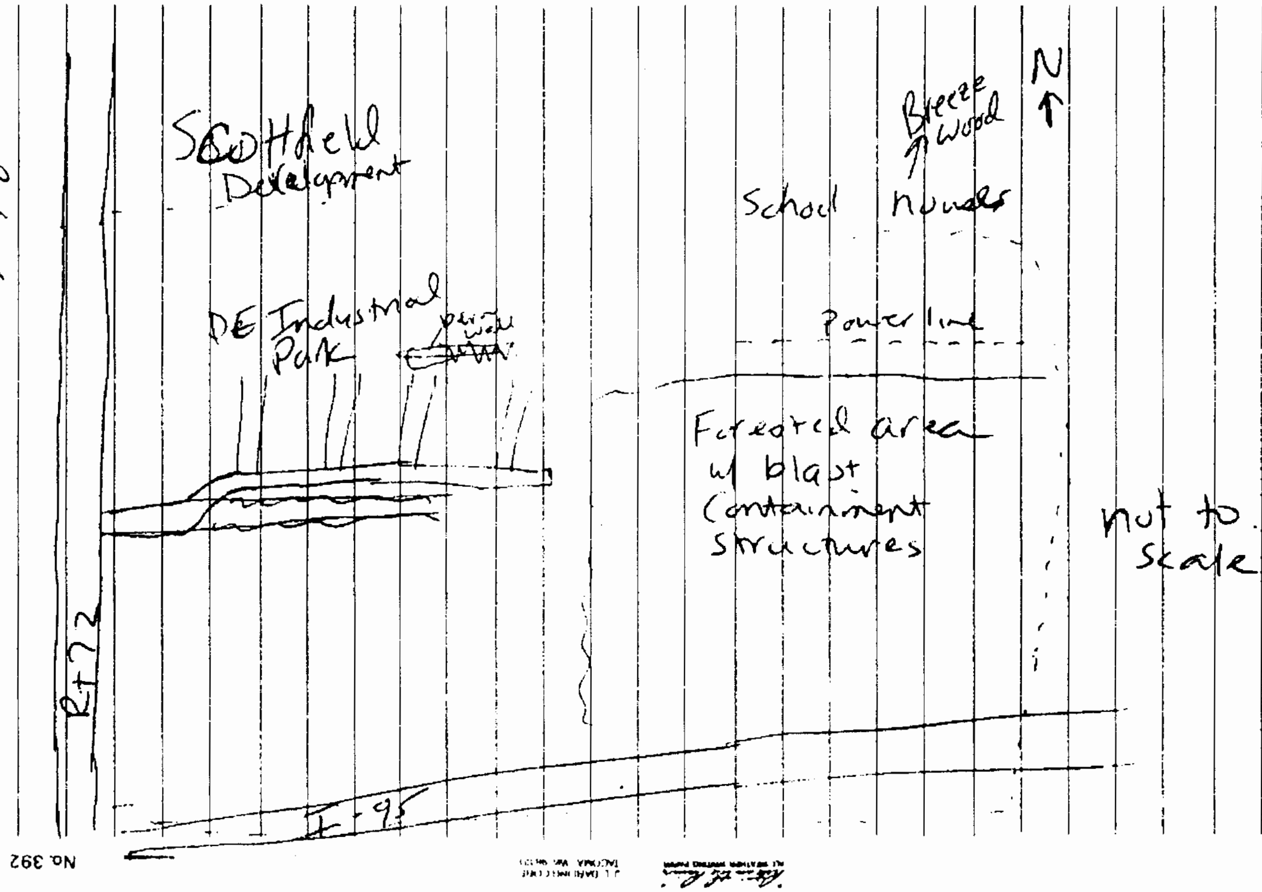
No. 352

NO INSTRUMENT RESPONSE
NOTED DURING WALKOVER

12:00AM LEFT SITE
- DROVE THROUGH SCOTTFIELD
DEVELOPMENT AND BREEZE
WOOD DEVELOPMENT - HOUSES
SEEN FROM SITE ARE IN
BREEZEWOOD DEVELOPMENT
- SCHOOL SEEN IS THE
RAMON C. CUBBS LOWER
SCHOOL
- CUBBS GAUGER PARK
ALSO BORDERS SITE

[signature]

Pg 5 of 6



Pg 6 of 6

EQUIPMENT CALIBRATION & PPE SHEET

NAME: Anne Hiller DEPT.: Superfund

PHONE #: (302) 323-4540 DATE: 6/2/92 DATE RETURNED: _____

SITE NAME & LOCATION: Newark Munition Storage Site, Rt 72 Newark.

WEATHER CONDITIONS:
TEMPERATURE (F) [A.M.]: 70°
TEMPERATURE (F) [P.M.]: _____
WIND DIRECTION & SPEED: unk
HUMIDITY: unk

1. EQUIPMENT & SERIAL #: HNV 30996

ESTIMATED # HRS. USED: 1 CALIBRATION GAS USED? (Y) N

IF SO, WHAT TYPE: HNV Cal Gas

BATTERY O.K.? (Y) N

PRE-CAL RESULTS: 56 @ 5.4 DATE AND TIME: 6/2/92 9:10 AM

POST-CAL RESULTS: 56 @ 5.4 DATE AND TIME: 6/2/92 1:00 PM

2. EQUIPMENT & SERIAL #: CGI 13962

ESTIMATED # HRS. USED: 1 CALIBRATION GAS USED? (Y) N

IF SO, WHAT TYPE: MSA Cal Gas

BATTERY O.K.? (Y) N

PRE-CAL RESULTS: 55% O2/50% LEL DATE AND TIME: 6/2/92 9:15 AM

POST-CAL RESULTS: 55% O2/50% LEL DATE AND TIME: 6/2/92 1:00 PM

3. EQUIPMENT & SERIAL #: _____

ESTIMATED # HRS. USED: _____ CALIBRATION GAS USED? Y N

IF SO, WHAT TYPE: _____

BATTERY O.K.? Y N

PRE-CAL RESULTS: _____ DATE AND TIME: _____

POST-CAL RESULTS: _____ DATE AND TIME: _____

REFERENCES

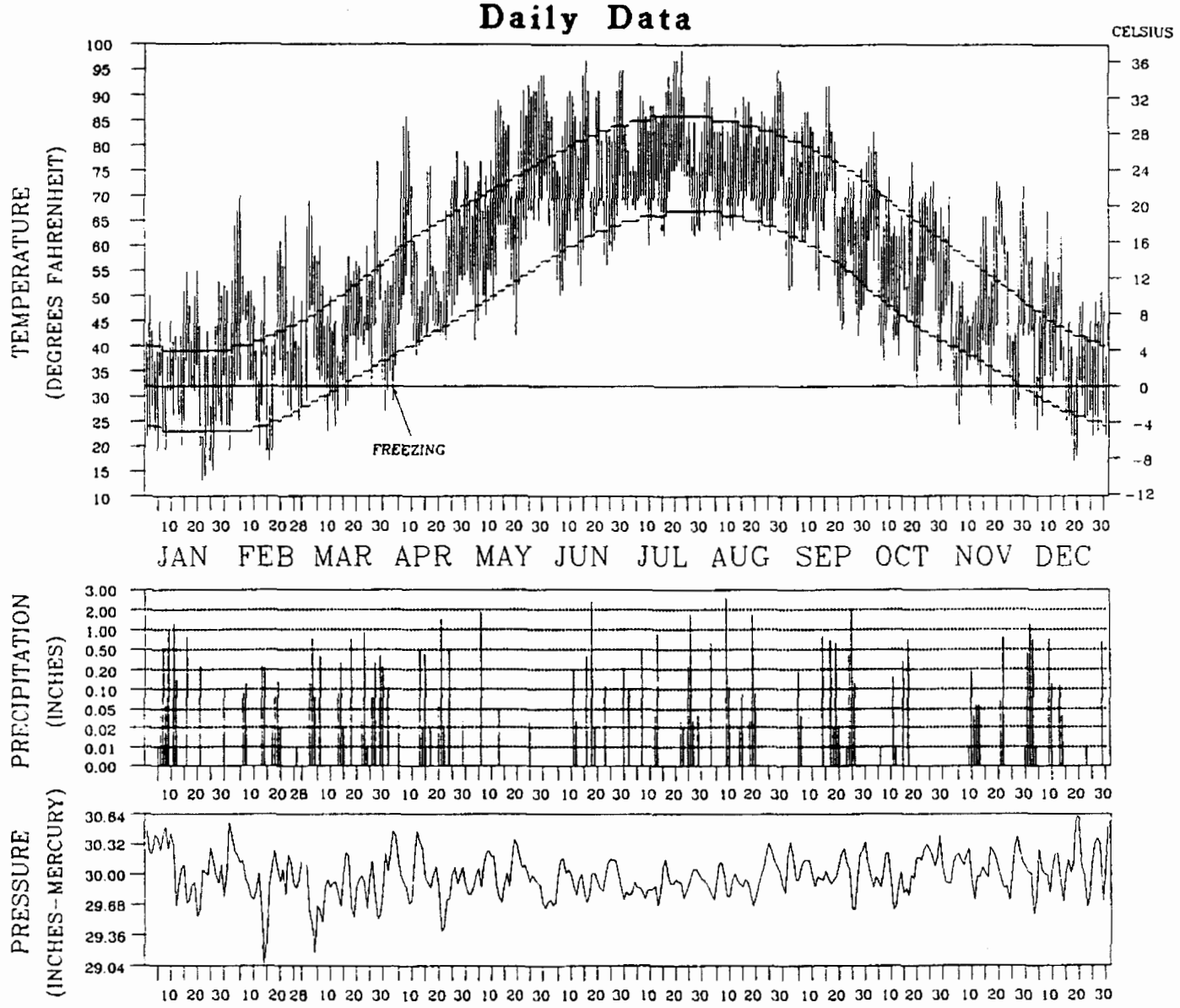
GETSY

ISSN 0198-1145

1991 LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA

WILMINGTON,
DELAWARE

Daily Data



TEMPERATURE DEPICTS NORMAL MAXIMUM, NORMAL MINIMUM AND ACTUAL DAILY HIGH AND LOW VALUES (FAHRENHEIT)
PRECIPITATION IS MEASURED IN INCHES. SCALE IS NON-LINEAR
STATION PRESSURE IS MEASURED IN INCHES OF MERCURY

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER, ASHEVILLE, NORTH CAROLINA, 28801

Kenneth D Hadeen
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE | NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

PRECIPITATION (inches)

WILMINGTON, DELAWARE

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1962	2.51	3.26	4.30	3.50	1.61	3.05	1.78	1.87	3.65	1.51	4.87	2.50	34.41
963	2.05	2.09	4.24	1.12	1.23	3.26	1.65	4.03	3.50	0.21	6.87	1.85	32.10
964	4.13	3.37	2.20	5.97	0.22	1.02	3.70	1.83	2.77	1.29	1.62	4.70	32.82
1965	2.38	2.17	3.20	1.76	1.41	1.62	3.84	2.04	2.41	1.59	0.94	1.54	24.90
1966	2.82	4.90	0.81	3.16	3.35	0.70	3.09	1.42	8.53	5.17	1.75	3.81	39.51
1967	1.67	1.90	5.45	2.69	3.79	3.01	4.45	11.16	1.16	2.05	2.08	5.24	44.65
1968	2.29	1.52	4.75	1.57	4.78	2.81	1.83	1.17	1.50	3.28	3.92	2.33	31.75
1969	1.68	1.76	1.71	1.58	3.21	3.62	6.48	2.34	6.84	1.47	1.79	7.90	40.38
1970	1.00	2.13	3.61	5.56	0.94	6.16	6.03	2.31	0.82	2.64	4.09	3.02	38.31
1971	2.22	6.29	2.29	2.15	4.51	2.50	3.65	8.38	6.99	6.41	5.52	1.33	52.24
1972	2.50	5.43	2.40	4.47	3.85	7.49	2.07	0.25	1.64	4.20	7.84	5.99	48.13
1973	3.81	3.42	4.02	6.57	5.56	5.19	2.82	2.44	3.02	2.22	0.67	7.31	47.05
1974	2.92	1.73	4.56	3.08	3.96	3.97	1.49	5.11	5.65	1.77	1.19	4.18	39.61
1975	4.23	2.95	4.63	3.03	5.65	6.16	5.53	2.55	6.19	3.06	2.63	3.00	49.61
1976	4.21	1.70	2.25	1.40	5.05	2.14	4.33	2.00	2.11	6.12	0.49	1.79	33.59
1977	2.18	1.09	4.55	3.91	0.96	4.41	1.38	4.82	1.29	3.59	6.14	5.81	40.13
1978	8.41	1.77	5.59	2.16	6.94	3.00	5.53	5.97	2.18	1.48	2.69	5.56	51.28
1979	7.61	7.02	2.61	4.03	3.10	4.01	4.76	6.11	5.94	3.45	3.23	1.44	53.31
1980	2.44	0.83	6.22	4.55	2.40	4.23	3.49	1.09	1.44	3.99	2.41	0.83	33.92
1981	0.52	3.23	1.26	3.54	5.05	4.50	2.52	3.38	3.82	2.84	0.67	3.95	35.28
1982	3.75	2.71	2.87	5.41	3.72	4.70	2.70	4.68	2.30	1.97	3.87	2.39	41.07
1983	2.98	3.55	6.84	6.80	7.38	3.94	2.33	1.29	3.44	3.87	5.48	6.80	54.70
1984	1.25	4.27	5.40	4.24	5.03	4.54	6.53	1.56	2.02	3.31	1.63	1.94	41.72
1985	1.56	2.05	2.03	0.35	5.52	1.37	6.91	2.28	4.56	1.84	4.46	0.80	33.73
1986	4.21	2.77	1.19	2.77	1.69	4.05	3.99	2.88	2.75	4.04	6.42	6.11	42.87
1987	4.35	1.52	1.16	2.63	3.15	2.31	4.09	4.21	4.85	2.31	3.50	1.90	35.98
1988	2.46	4.14	1.82	2.59	4.95	0.21	8.29	3.03	2.18	1.94	5.29	0.90	37.80
1989	2.48	2.75	3.69	2.76	6.57	5.43	12.63	1.97	4.31	3.92	1.99	1.27	49.77
1990	3.56	1.35	2.15	3.42	7.03	3.94	4.27	6.15	2.64	2.85	1.61	5.16	44.13
991	4.30	0.97	4.64	3.28	1.98	3.41	3.71	5.38	5.36	1.27	1.26	4.26	39.82
ecord Mean	3.31	3.05	3.65	3.51	3.67	3.76	4.55	4.54	3.61	3.01	3.23	3.43	43.33

See Reference Notes on Page 6B.
Page 4A

AVERAGE TEMPERATURE (deg. F)

WILMINGTON, DELAWARE

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
962	31.2	31.3	41.2	52.2	64.2	71.5	72.6	72.9	63.6	56.7	42.5	30.3	52.5
963	28.4	27.5	44.1	52.6	60.3	70.8	76.3	71.7	63.7	58.4	48.0	28.4	52.5
1964	33.2	31.6	43.1	49.4	64.3	72.1	75.8	71.5	67.2	52.8	47.6	37.3	53.8
1965	29.0	33.6	38.4	49.3	66.0	70.2	74.5	73.3	69.4	53.6	45.0	37.7	53.3
1966	29.3	31.9	42.9	47.9	60.3	72.5	77.2	74.8	65.3	53.6	46.6	34.8	53.1
1967	36.2	29.4	39.4	51.5	55.4	71.2	74.4	72.8	65.1	54.7	40.7	36.8	52.3
1968	28.0	30.5	44.6	54.1	59.6	71.4	76.7	77.1	69.7	59.0	47.0	34.2	54.3
1969	30.8	33.6	39.6	55.1	64.2	73.4	75.7	75.4	68.2	56.0	44.6	32.7	54.1
1970	24.5	33.5	38.9	51.9	64.8	71.7	76.6	76.7	72.1	60.4	48.5	35.9	54.6
1971	27.4	35.5	40.7	51.1	60.4	73.4	75.9	74.0	71.1	62.9	45.7	42.1	55.0
1972	36.1	32.6	41.3	50.0	62.5	68.6	76.9	75.5	69.6	53.5	45.2	41.6	54.4
1973	35.6	35.5	49.4	54.7	61.4	75.8	78.1	78.1	70.4	59.9	49.1	37.7	57.2
1974	36.2	33.1	44.3	55.5	62.4	70.4	76.7	76.1	66.5	53.2	46.6	38.9	55.0
975	37.5	35.9	40.6	47.5	65.2	71.5	75.7	76.3	65.4	60.0	51.0	36.2	55.2
976	27.7	41.2	46.5	54.7	59.9	72.4	74.2	73.7	66.9	52.5	40.4	31.0	53.4
977	20.8	33.3	47.2	54.4	63.9	68.9	76.4	75.4	69.3	53.4	46.6	33.4	53.6
1978	27.2	22.8	37.6	50.3	60.3	70.6	73.4	77.1	66.7	54.1	46.8	37.2	52.0
1979	31.4	22.1	45.4	50.6	63.8	67.9	75.3	75.0	68.2	55.0	49.6	38.1	53.5
1980	32.4	29.9	40.0	54.6	64.9	68.9	77.7	78.2	71.3	54.8	43.3	33.1	54.1
1981	25.4	37.9	40.2	55.0	62.5	72.3	77.1	73.5	66.9	53.0	45.3	34.2	53.6
1982	24.2	34.2	41.8	50.6	65.0	69.9	77.3	72.0	67.4	56.0	47.5	41.3	53.9
1983	35.2	35.3	45.9	53.1	61.0	71.8	77.6	77.0	69.3	56.9	46.7	32.1	55.2
1984	24.8	38.6	35.6	50.7	61.2	73.8	75.2	75.2	63.7	61.2	43.3	42.1	53.8
1985	27.5	37.4	47.1	58.0	65.9	70.6	76.6	74.4	69.1	58.3	51.0	32.9	55.7
1986	32.2	31.6	43.6	52.4	65.7	72.1	77.1	72.5	67.5	57.2	44.1	37.3	54.4
1987	31.4	31.9	44.6	52.3	63.1	73.5	79.1	74.3	68.3	51.7	47.4	38.6	54.7
1988	27.4	34.8	44.2	50.8	62.9	71.6	79.4	77.3	65.8	51.0	46.7	35.1	53.9
1989	36.0	34.3	42.1	51.6	62.1	74.3	75.9	74.4	68.4	57.6	44.6	25.0	53.9
1990	40.5	41.1	46.0	53.7	61.5	72.1	77.4	74.6	66.7	60.0	48.4	41.0	56.9
1991	34.3	39.7	44.9	54.7	69.1	73.6	77.3	76.7	67.2	57.6	46.8	39.5	56.8
Record Mean	32.2	33.3	42.2	52.3	62.8	71.3	76.1	74.3	67.8	56.5	45.7	35.3	54.2
Max	40.0	41.6	51.6	62.8	73.4	81.6	85.7	83.7	77.6	66.5	54.5	43.1	63.5
Min	24.3	24.9	32.7	41.8	52.1	61.1	66.5	64.8	58.1	46.6	36.9	27.5	44.8

See Reference Notes on Page 6B.
Page 4B

REFERENCE 7

TELEPHONE LOG

From Anne Hiller To Kevin Kennard Date 5/28/92 Time _____

Company Historical Society of Delaware

Phone Number (302) 655-7161 Folow-up _____

Message: Kevin Kennard provided information about the history of the Newark Munitions Storage Site from his own experience and from the book Delaware's Role in World War II, 1940-1946 written by William H. Conner and Leon de Valinger Jr., Dover 1955.

The Newark Munitions Storage facility operated from April 1944 until shortly after V-J day. It was operated by the Army Service Forces, Quartermaster and Ordnance Corps. The site consisted of 10 miles of RR track, guard towers, barbed wire fences, blast containment structures. The facility was a storage and transhipment point for munitions going to Europe through the Port of New York.

Mr. Kennard suggested after possible sources of information as Dept. of Defense or the National Archives. He indicated that obtaining information from either institution is a long process. Also, to make an effective search the unit name & # should be known. He said he did not know how to find those things however. The Historical Society does not have any applicable maps or photographs.

REFERENCE 8

TELEPHONE LOG

From Karl KALBACHER To U.S. Army Corp of Engineers Date 9/3/92 Time 11:00

Company Baltimore District

Phone Number 410 962-3542 Folow-up

Message: I spoke with a representative of the Baltimore District of the U.S. Army corp of Engineers regarding the Newark Munitions storage site. They informed me that the site was called the Newark Holding Yard and is scheduled for investigation during the FY 93 term as a formerly USED Defense Site. An "Inventory Project Report" will be prepared for the site. The Corp was able to provide me with Background information on the site. In June 1943 the U.S. Army made a ~~Decla~~ declaration of Taking on 1222.79 acres. The site was used subsequently by the U.S. Army Chief of Transportation Command as a Backup Ammunition Storage Facility for the New York Port of Embarkation station during World War II. In 1945 the entire property was ~~conveyed~~ classified as Surplus by the War Dept. An Accountability of Property transferred to the Federal Farm Mortgage Corp was completed in 1946. There is no information available on the ammunition which was stored at the Facility. The Baltimore division of the Corp of Engineers will look into this during the Inventory Project Report.

REFERENCE 11

TELEPHONE LOG

From Joe Fitzgerald To KARL KALBACHER Date 6/19 Time 10:00

Company DNREC I + E

Phone Number 739 - 4506 Follow-up _____

Message: PerForm File search For present owners At Newark Munitions Storage Site. 15 TOTAL PARCELS At the site

Delaware Industrial Park Inc owns 4 PARCELS

Delaware Industries " 1 "

" " " " " Inc " 1 "

Delaware Insulation Company " 1 "

Delaware Investment Associates " 7 "

Delaware Industrial Building Company " 1 "

REFERENCE 12

STATE OF DELAWARE

UNIVERSITY OF DELAWARE

DELAWARE GEOLOGICAL SURVEY

REPORT OF INVESTIGATIONS NO. 18

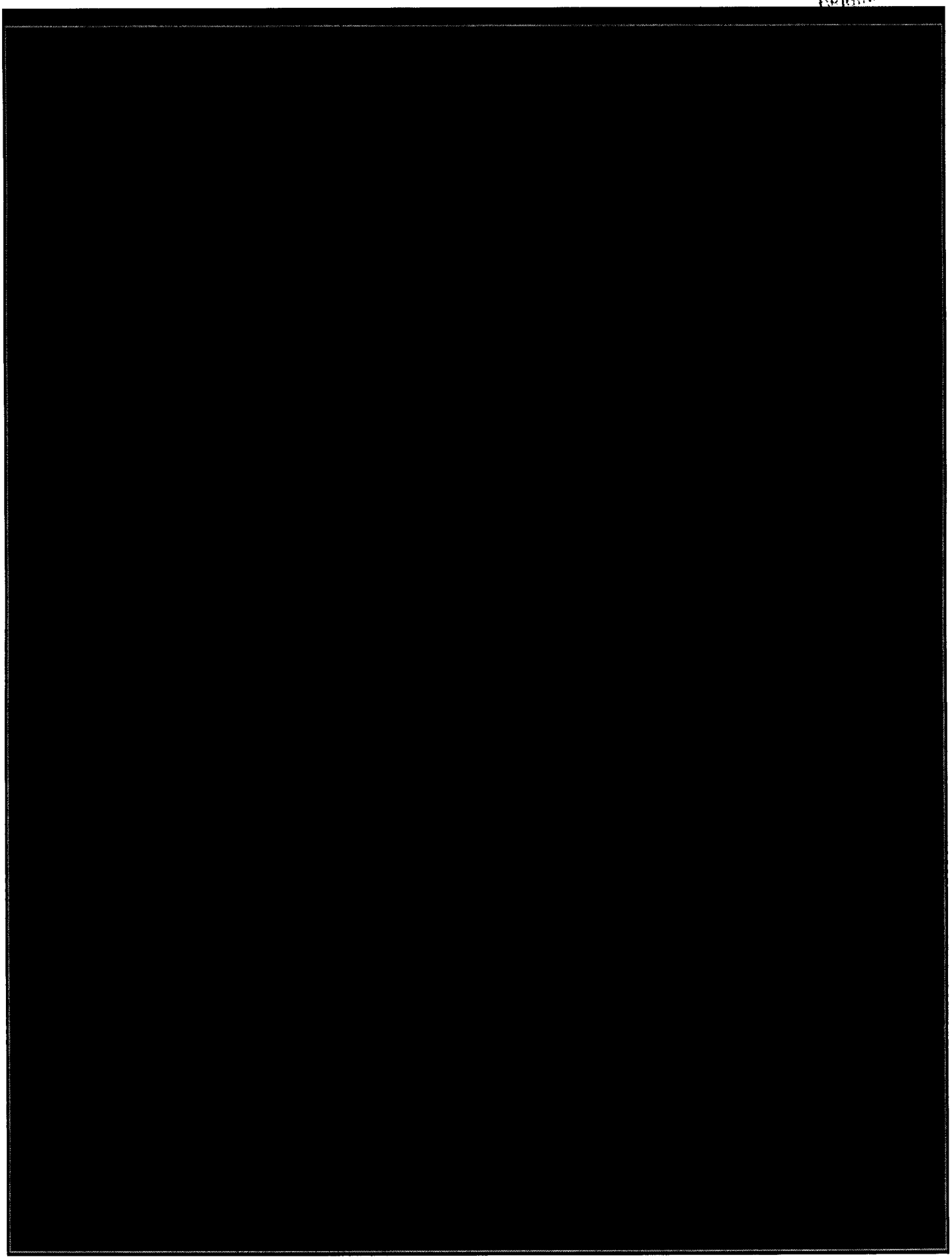
GEOLOGY AND GROUND WATER, UNIVERSITY OF DELAWARE, NEWARK, DELAWARE

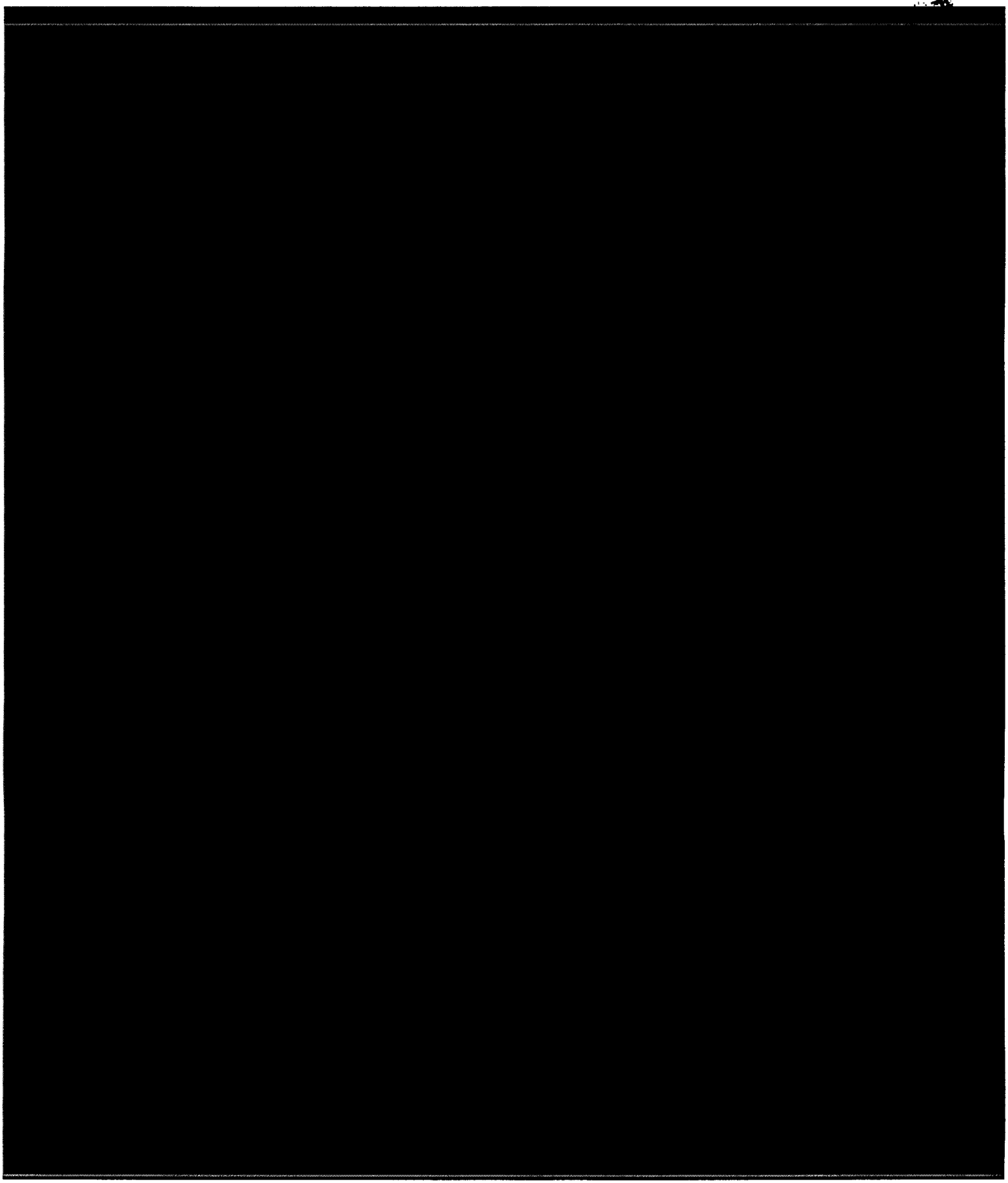
BY

K. D. WOODRUFF
J. C. MILLER
R. R. JORDAN
N. SPOLJARIC
T. E. PICKETT

NEWARK, DELAWARE

MAY, 1972





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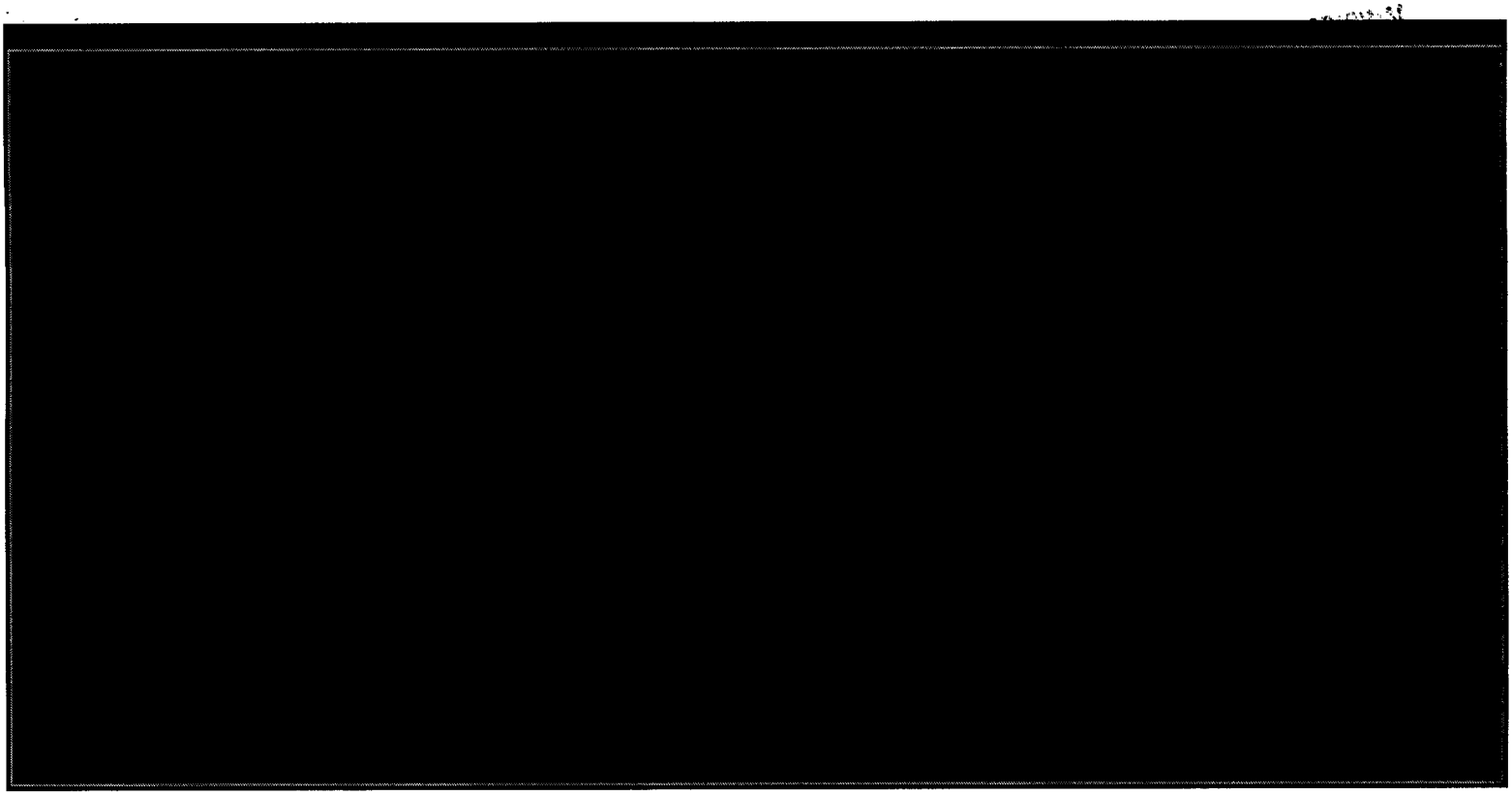
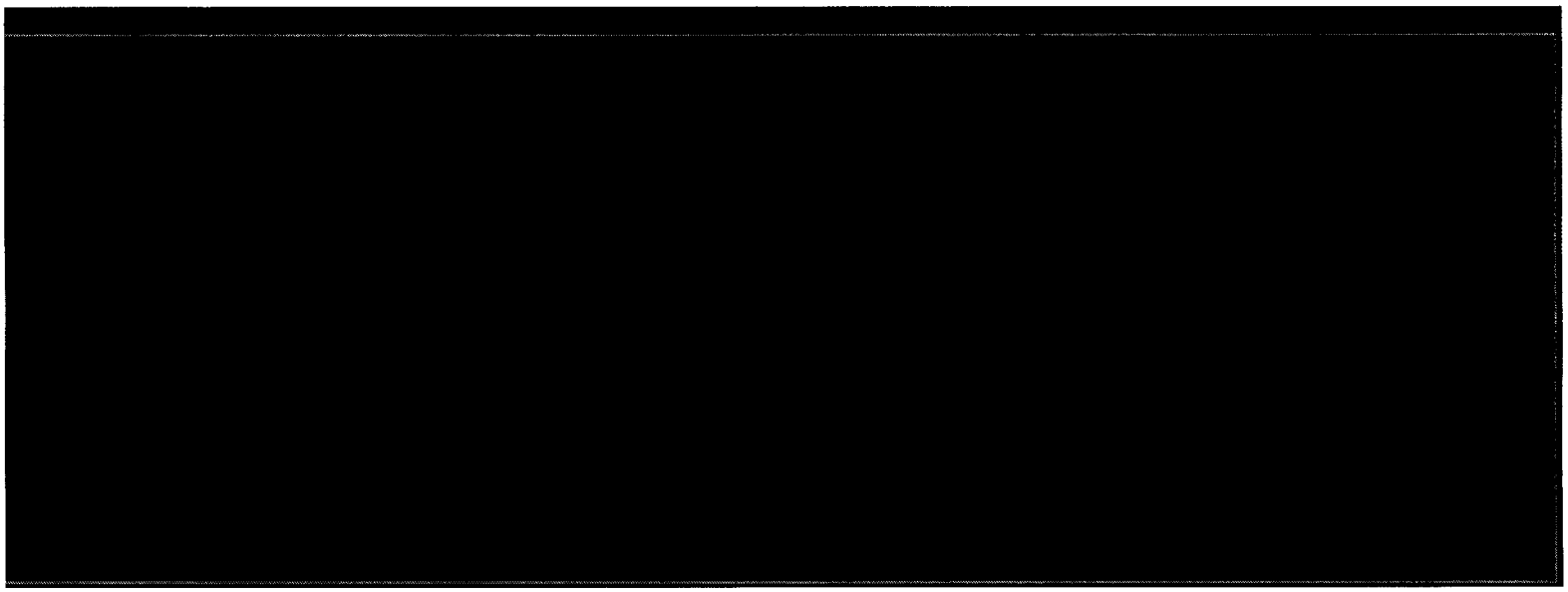
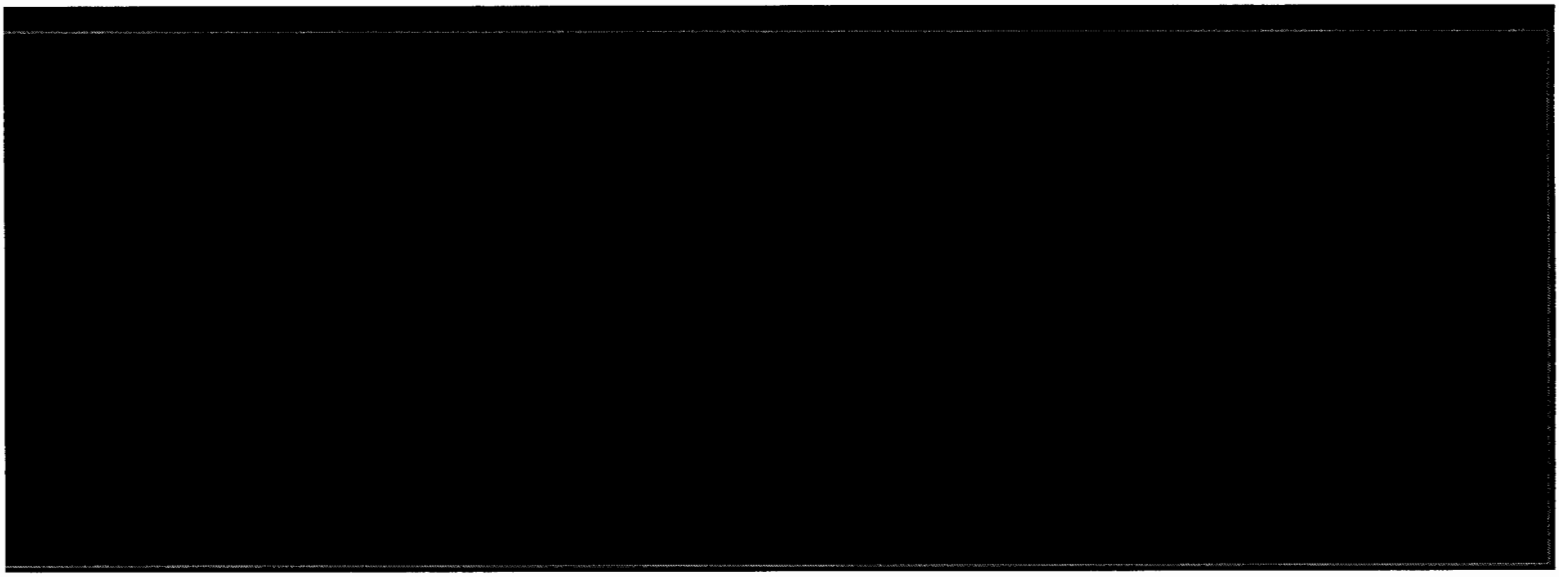
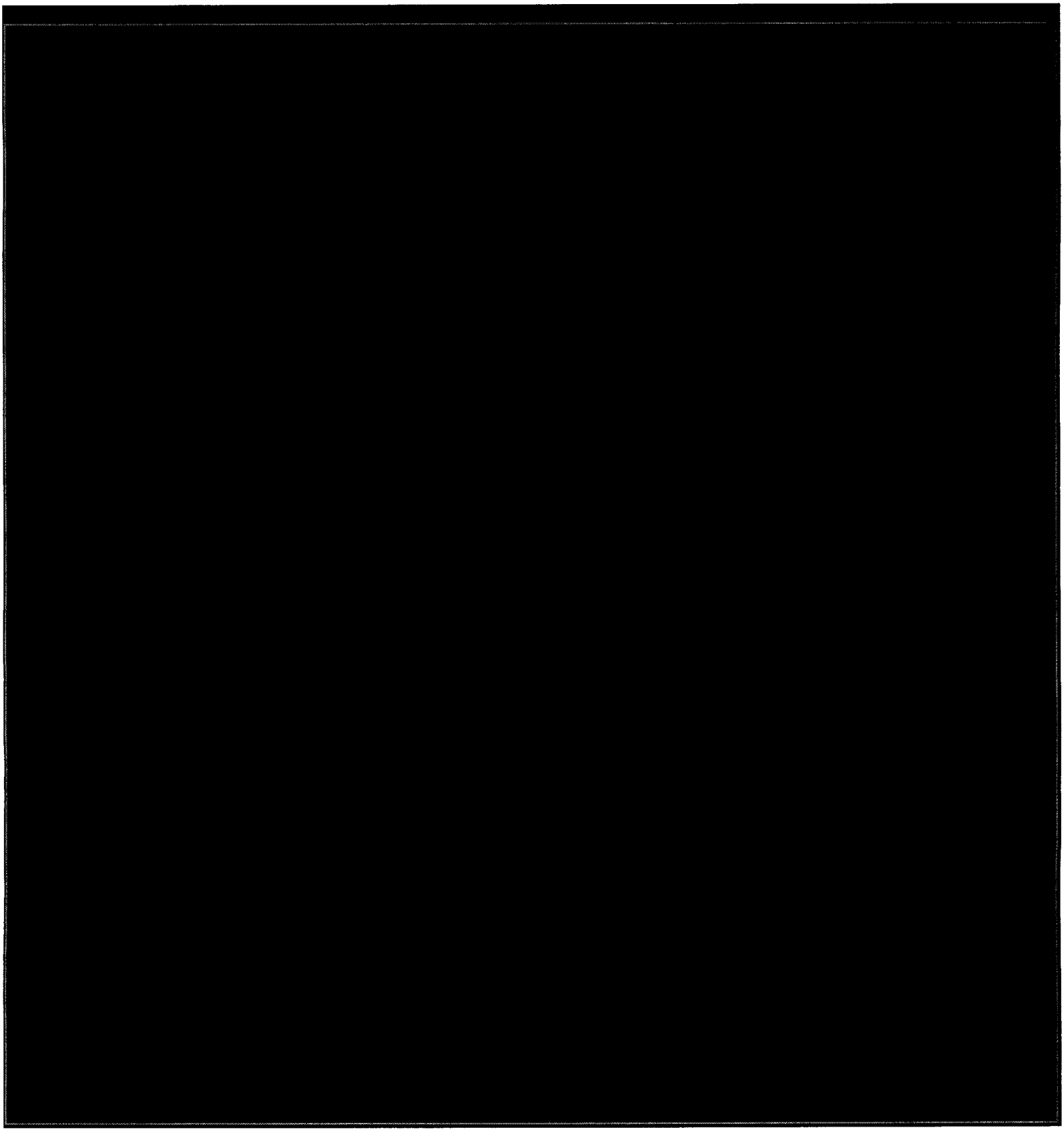
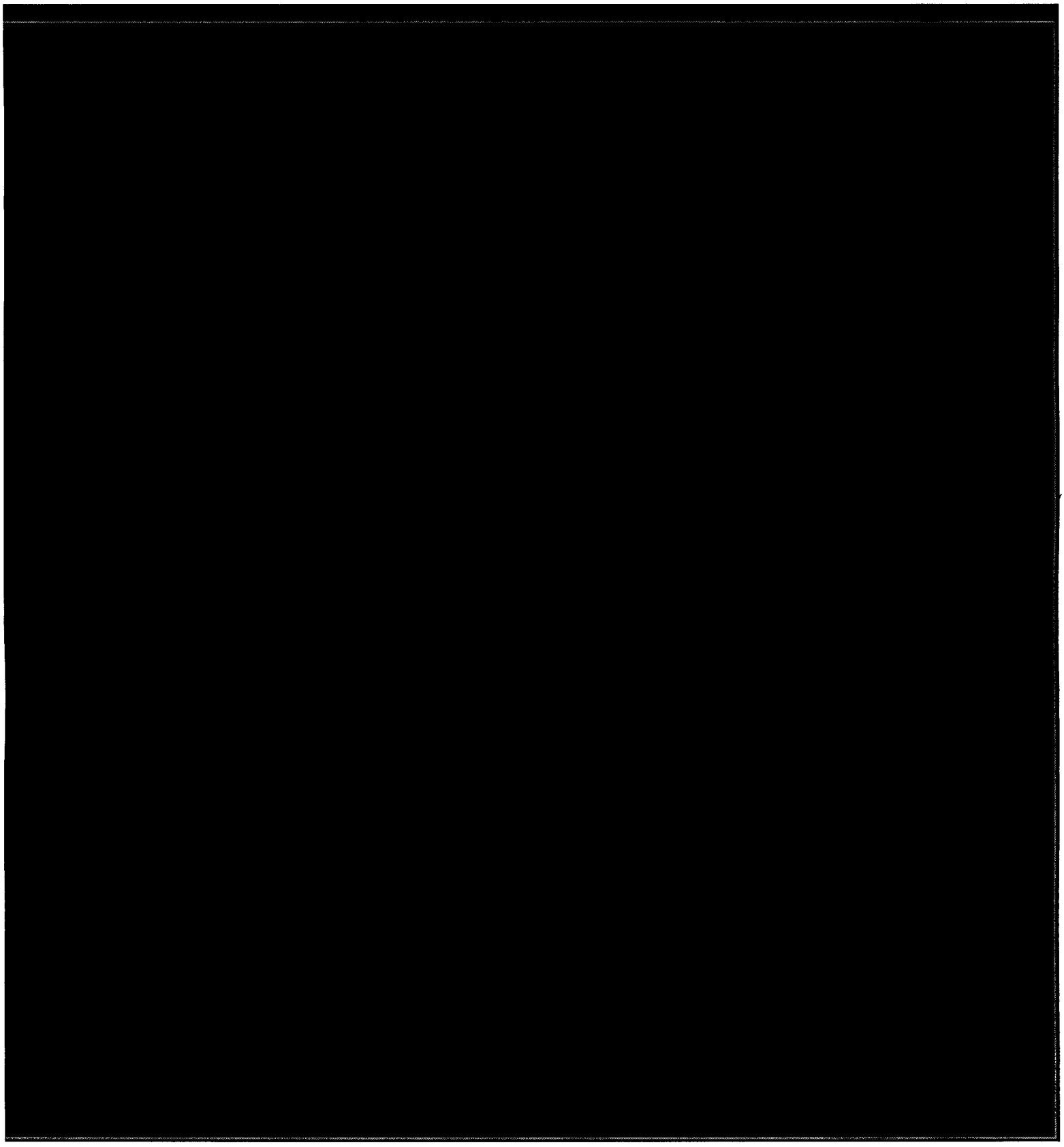
[redacted]

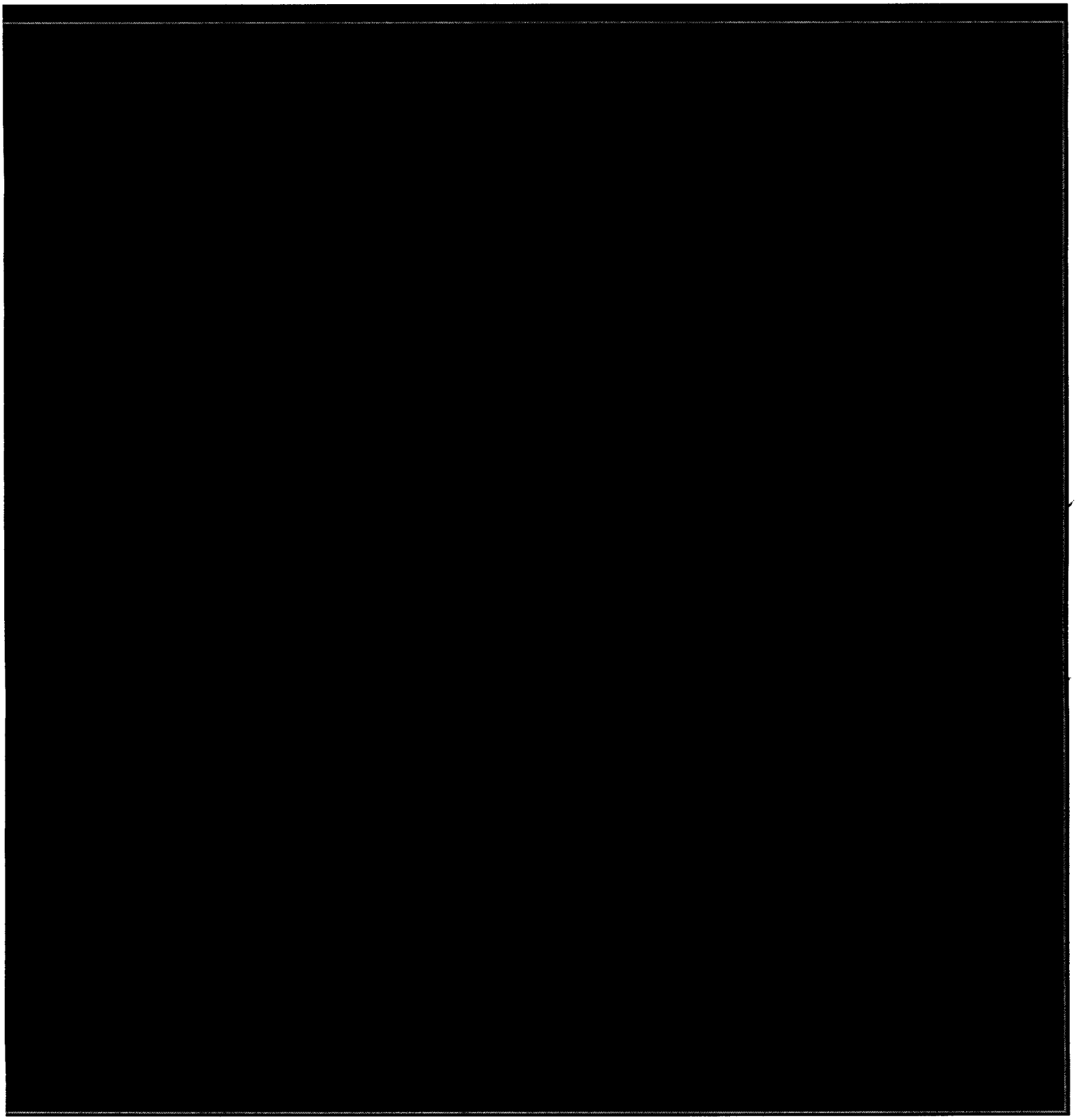




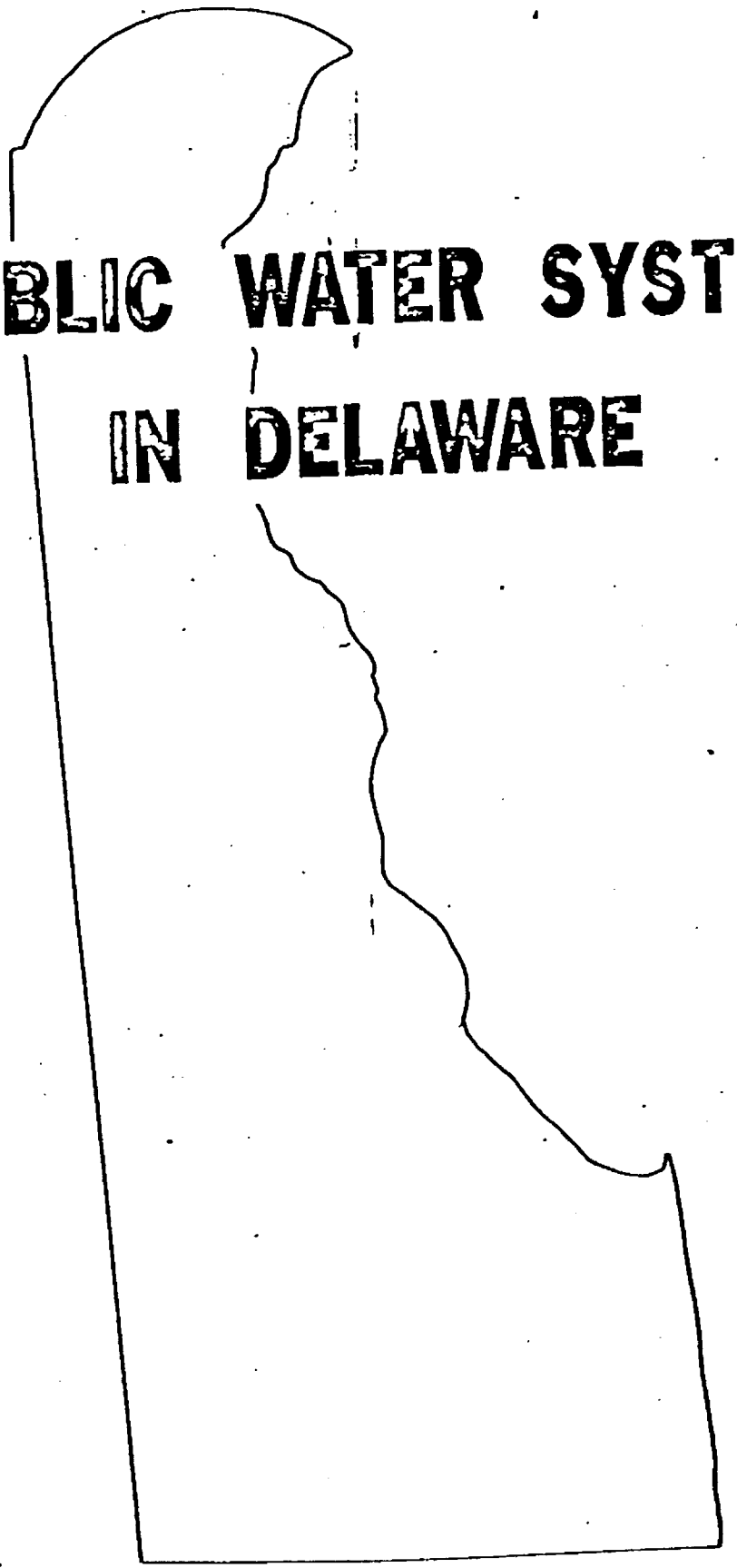








PUBLIC WATER SYSTEMS IN DELAWARE



1978

INTERPRETATION OF WELL INDICATOR

A	Successful well later abandoned
C	Permit cancelled
D	Deepened an existing well
U	Unsuccessful new well
T	Test Well
R	Reworked or redrilled well under another permit
X	More than one hole drilled before a sufficient yield

WATER USE CODE

D	Home (single or Double Household unit only)
F	Farming (livestock Watering & Agricultural Irrigation)
I	Industrial, Commercial, State and Federal Gov. other (Requires Appropriation Permit)
P	Public or Private Water Company (Requires Appropriation Permit and State Health Department Approval)
T	Test, Observation, Monitoring (May require Appropriation Permit)

REPLACEMENT OR DEEPENED WELLS

N	This well will not replace an existing well (new well)
Y	This well will replace a well that will be abandoned & sealed (replacement well)
S	This well will replace a well that will be used as a standby

MARYLAND DIVISION OF RESIDENTIAL SANITATION WELL APPLICATIONS PROCESSED REPORT

REFERENCE 19

TELEPHONE LOG

From Anne Hiller To Phil Carpenter Date 6/18/92 Time _____

Company DE DNREC - Fish + Wildlife

Phone Number 739-3436 Follow-up _____

Message: Phil Carpenter provided information on fisheries and sensitive environments around the site and on the Christina River. Fisheries as defined for a PA exist along the entire 15 mile downstream target distance. The Christina River is tidal to Smalley's Dam. Above Smalley's Dam fish such as large mouth bass, blue gill, crappie, catfish occur. Below Smalley's Dam fish such as eel, white perch, large mouth bass, blue gill occur. There are no state designated sensitive environments along the Christina River. There are no terrestrial sensitive environments in the vicinity of the site.

NATIONAL FLOOD INSURANCE PROGRAM

FLOODWAY
FLOOD BOUNDARY AND FLOODWAY MAP

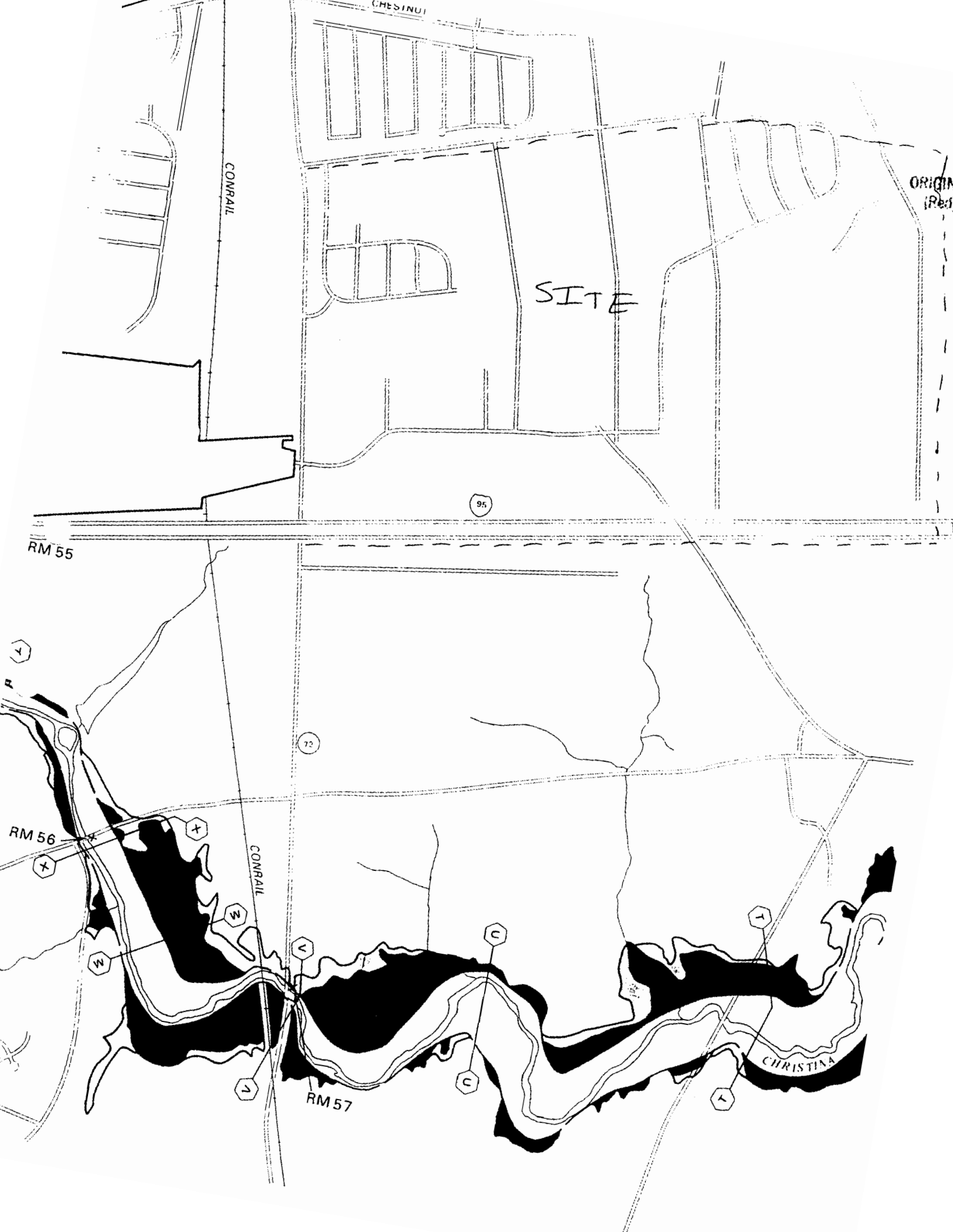
NEW CASTLE COUNTY, DELAWARE
UNINCORPORATED AREAS

PANEL 40 OF 110
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
105085 0040

MAP REVISED:
JULY 3, 1990

Federal Emergency Management Agency


CHESTNUT
CONRAIL
SITE
95
RM 55
72
RM 56
CONRAIL
RM 57
CHRISTINA

REFERENCE 21

R-585-3-1-38

ENVIRONMENTAL PRIORITIES INITIATIVE PRELIMINARY ASSESSMENT OF DUPONT E.I. RISTON PRODUCTS CENTER PREPARED UNDER

TDD NO. F3-9101-01
EPA DSN DE-0248
FACILITY I.D. NO. DED000800292
CONTRACT NO. 68-01-7346

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JUNE 28, 1991

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
CHERYL ANN SCANLON PROJECT MANAGER	VINCENT SHICKORA SECTION SUPERVISOR	GARTH GLENN REGIONAL MANAGER, FIT 3

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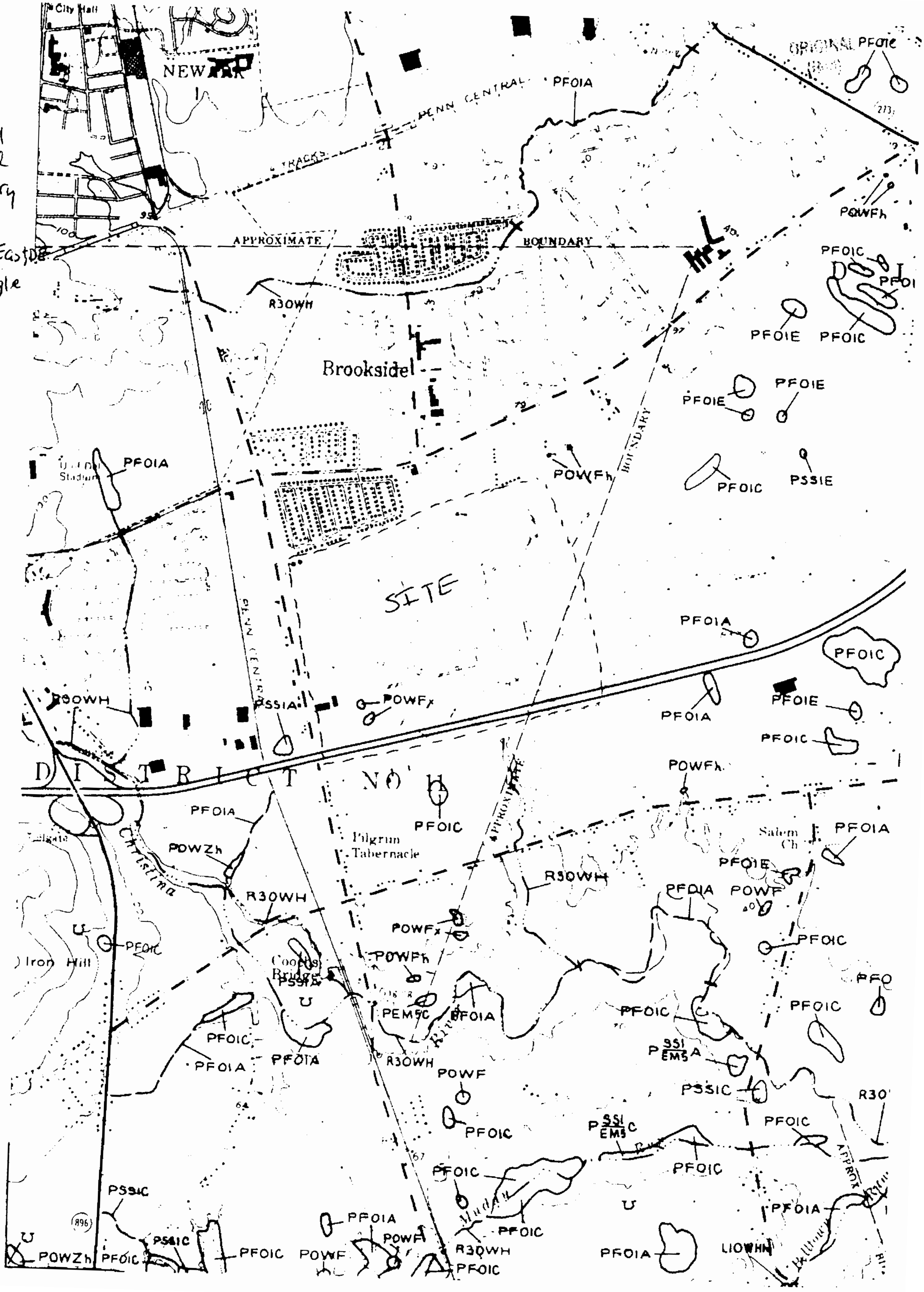
City Hall
NEWARK
PENN CENTRAL
4 TRACKS
APPROXIMATE
BOUNDARY
ORIGINAL PFOIE
PFOIA
POWFh
PFOIC
PFOI
PFOIE
R3OWH
Brookside
PSSIE
POWFh
Stadium
SITE
PENN CENTRAL
BOUNDARY
R3OWH
PSSIA
POWFx
DISTRICT NO. 1
APPROXIMATE
Pilgrim Tabernacle
Salem Ch
Christina
POWZh
Iron Hill
Coochs Bridge
PSSIA
PEM5C
River
POWF
P SSI/EM5 A
PSSIC
P SSI/EM5 C
Mud
PSSIC
POWZh
896
L1OWHh
R3O
APPROX

REFERENCE 16

DELAWARE WATER USE DATA SYSTEMS
EXPLANATION OF CODES IN DWUDS

DNRECID = PERMIT NUMBER
CUROWNERID = PRESENT OWNER
DATE_DRILLED = CONSTRUCTION DATE
HOLE_DEPTH = WELL DEPTH
TOP = CASED INTERVAL
BOTTOM = CASED INTERVAL
APP_MAX = TGD MAX DAILY
APP_CAP = GPM

LAT,(DEG),(MIN),(SEC) = LATITUDE
LON,(DEG),(MIN),(SEC) = LONGITUDE

WATLEV_PRES = STATIC WATER LEVEL
DRLOG_PRES = DRILLER'S LOG

STATIS =
- A = ABANDONED
- B = BUILT
- C = COMPLETED
- D = DESTROYED
- E = EXPIRED
- H = HOLD
- I = ISSUED
- N = NOT USED
- P = PENDING
- R = RETURN
- S = STANDBY
- T = CONSTRUCT ONLY
- V = VOID

WATERUSE =
- A = AGRICULTURAL
- C = COMMERCIAL
- D = DOMESTIC
- E = ENGINEERING TEST BORING
- F = FIREFLOW
- G = HEAT PUMP SUPPLY
- H = DEWATERING
- I = INDUSTRIAL
- M = MONITOR
- O = OTHER
- P = PUBLIC
- R = IRRIGATION
- T = HEAT PUMP RECHARGE
- X = PUBLIC CHANGED TO MONITOR
- Y = INDUSTRIAL TO MONITOR

DRILLMETH = DRILL METHOD
- A = AIR ROTARY
- B = BORED
- C = CABLE TOOL
- D = DUG (BY HAND)
- E = AUGERED
- J = JETTED
- M = MUD ROTARY
- P = PERCUSSION
- R = REVERSE ROTARY
- V = DRIVEN
- W = WASHED